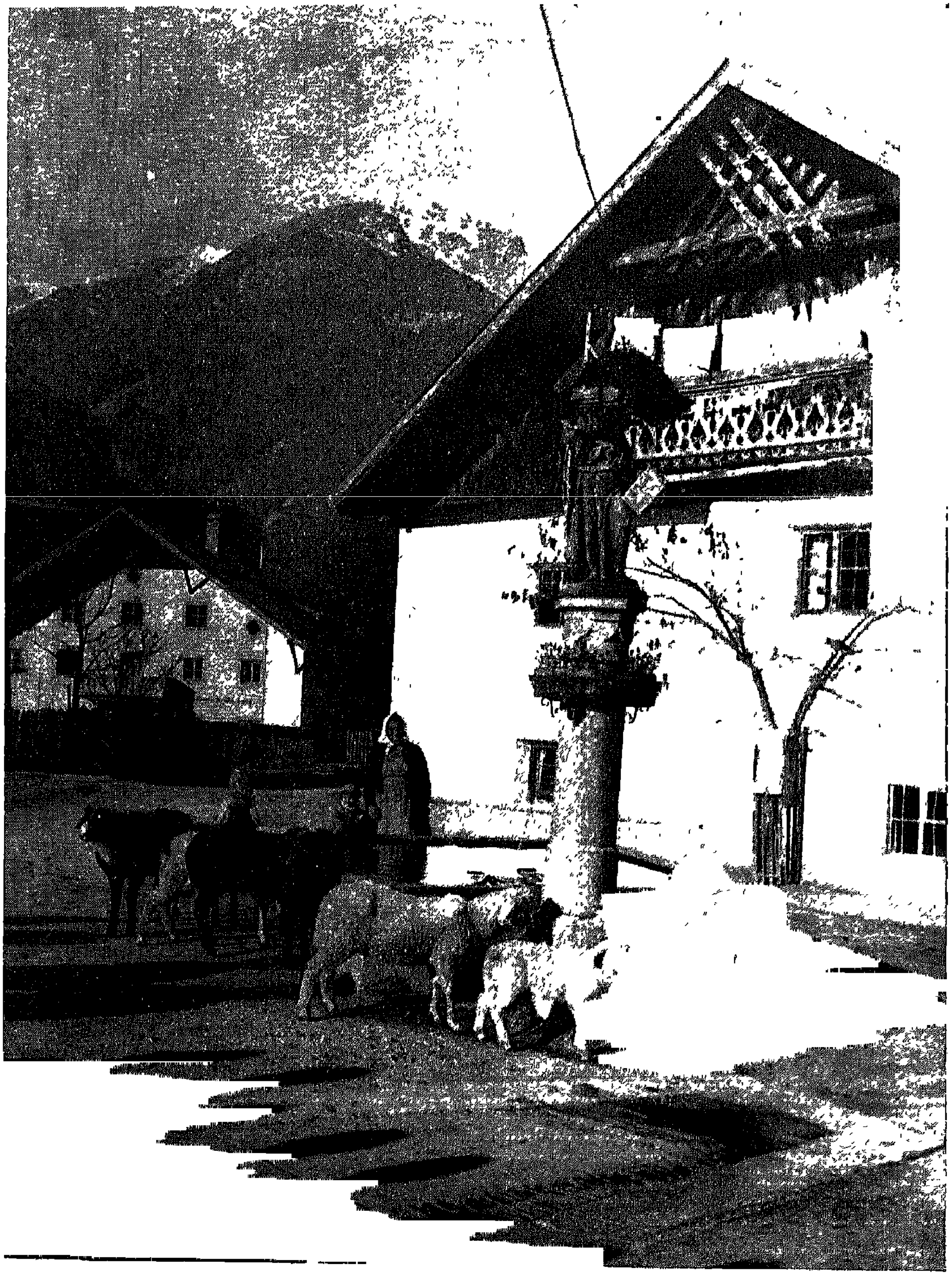

A FARMER'S DWELLING IN THE AUSTRIAN ALPS (COURTESY: EMBASSY OF AUSTRIA, NEW DELHI)

Note the natural environment and the resources which the farmer has put to his use. What suggests to you that he has been making use of his environment wisely ?

REGIONAL GEOGRAPHY

NORTH AMERICA
EUROPE
SOVIET UNION

A Textbook for Secondary Schools

Geography Panel

Dr. Mohammad Shafi *(Chairman)*
Dr. George Kuriyan
The late Dr. S. M. Ali
Dr. R. L. Singh
Prof. V. S. Gananathan
Dr. C. D Deshpande
Dr A. R. Irawathy
Dr R. H. Dave
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Shri B. S. Parakh *(Secretary)*

REGIONAL GEOGRAPHY

NORTH AMERICA
EUROPE
SOVIET UNION

A Textbook for Secondary Schools

Editors
MOHAMMAD SHAFI
B. S. PARAKH

al Council of Educational Research and Training

May, 1973
Vaisakha, 1895

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Regional Geography
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—Southern Continents

Geography S 4

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FOREWORD

THIS textbook on Regional Geography is the fourth in the series of such books for secondary schools in our country It has been prepared by a panel of experts under the Chairmanship of Prof Mohammad Shafi of the Aligarh Muslim University. Dr. G. Kuriyan, the late Dr. S. M. Ali, Dr. R. L. Singh, Prof. V. S. Gananathan, Dr. A. R. Irawathy, Dr. C. D. Deshpande, Prof. B Ghosh, Dr R. H. Dave and Shri B. S Parakh have all worked together and contributed to the success of this project. We are grateful to them for the magnificent work they have done.

This book is based on a draft syllabus prepared and finalised on the basis of suggestions from State Institutes of Education, State Departments of Education and Training Colleges. The draft write-up of the textbook was discussed and modified after holding seminars attended by a variety of interested persons.

It is sincerely hoped that this book would prove as useful as our previous publications. We look forward to suggestions and comments from the users so that we could improve on the present text in its future editions.

One of our valued colleagues in the panel, Dr. S. M. Ali passed away while engaged in this work. We feel so sorry for this sad loss and we can do no better than dedicate this volume to his memory.

New Delhi
March 12, 1970

S. V. C. AIYA
Director
National Council of Educational Research and Training

PREFACE

THE world in which we live today is certainly shrinking very fast Astronauts now circle our planet in just 90 minutes. The rapid strides made in the field of science and technology have opened up new possibilities of making life more and more comfortable and meaningful for millions and millions of our fellow beings with whom we have to share this earth and its resources.

A systematic study of our planet, its lands and peoples, its resources and their utilization by man, is, therefore, a must for every citizen of the world. In this context, the role of regional geography can hardly be overemphasized, particularly when growing cultural, political and economic ties among nations are becoming more and more intricate, promising better prospects on the one hand and threatening the total annihilation of mankind owing to regional rivalries, ideological conflicts and racial prejudices on the other

It is, indeed, a difficult task to prepare only one syllabus and a single textbook that may serve the needs of every part of our country, particularly when there are different patterns with emphasis differing from region to region. Nonetheless, this Panel devoted much time and thought to arrive at a common syllabus and to produce textbooks that would cover the needs of all.

The original chapters of the books on Regional Geography were written by Dr. M. Anas, Department of Geography, Aligarh Muslim University and Shri B. S. Parakh, National Institute of Education, New Delhi. The authors and the members of the Panel spent several days in discussing the drafts of the text. Original drafts were modified by editors of the Panel in the light of the deliberations and suggestions made by the members of the Panel. Criticisms and suggestions that were received from experienced teachers and headmasters from time to time were also carefully looked into.

I am thankful to the members of the Panel and the authors for their cooperation. My special thanks are due to Dr. George Kuriyan who had put in considerable amount of work in the initial stages of these books. I am so thankful to the teacher reviewers, nominated by the State Departments of Education, who gave very valuable suggestions to improve the text and enhance its suitability to our schools.

Thanks are also due to Shri Krishan Kumar of the Department of Human Geography, University of Delhi, who did all the cartographic work connected with these books. I am also thankful to a large number of agencies, Indian and foreign, for giving pictures incorporated in these books.

The bringing of the manuscripts to their present form involved a good deal of editorial and related work: such as selecting pictures, collecting and processing the data, sketching suitable diagrams and weaving them into the text, framing exercises, selecting further readings and compiling appendices. I am thankful to Shri B S. Parakh of the National Council who rendered invaluable help to me in this task besides looking after the large amount of correspondence involved in this project. But for his help, it would not have been possible for me to bring out the book in its present form. He was assisted by Shri D. S. Yadav and Miss Usha Malik.

I am thankful to the officials of the National Council, Professor S V. C Aiya, Director of the National Council, Dr. S. K. Mitra, former Joint Director of the National Council, Shri P. N. Natu, former Secretary, National Council, Dr. R. H. Dave, formerly Head of the Department of Curriculum and Evaluation, Professor T. S. Mehta of the Department of Social Sciences and Humanities and Shri D. Raghavan, Head, Publication Unit for their ungrudging help and cooperation in the execution of this project.

Aligarh
January, 1970

MOHAMMAD SHAFI

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TO TEACHERS

We have great pleasure in presenting to you this book which is the result of a cooperative effort on the part of several teachers both from schools and colleges. It is our earnest hope that the book would meet, at least, partially your own expectations and contribute to the improvement of instruction in geography in our country.

A small book such as this, which deals with highly industrialized continents like North America, Europe and the whole of the Soviet Union, can hardly be complete or perfect in every respect With the limited space at its disposal it must of necessity attempt to be selective and concise as far as practicable

In this book, North America, Europe and the Soviet Union have been treated as three separate units At the commencement of each unit a brief overview or a unit introduction has been provided It should serve as a gestalt—a broad and general frame-work—into which numerous details could be located by the student as he would come across them. They also highlight major characteristics of the region concerned which the teacher may like to emphasize in his class.

This brief introduction is followed by a chapter which devotes itself to the physical setting and economic development. In other words it presents a bird's eye view of the physical landscape, climatic conditions and the people's activities relating to the economic development of their natural resources.

Then follows a more detailed regional account dividing the continent into a few outstanding units. While doing so. an attempt has been made not to disregard the political and cultural boundaries since they are real entities as compared to conceptual regionalization.

An account of each country gives some idea about its land use pattern, density of population, pressure on arable land, range of its agricultural produce, farming practices adopted by its people, exploitation of various natural resources, the extent of industrialization and a degree of urbanization These facts are expected to develop some idea about the potential and actual achievements of a country and the stage of its technological development.

We think that this information has a special significance to our students as it should help them to widen their perspective and appreciate various stages through which a country has to pass in order to attain a well-developed economy.

It should be worthwhile to impress upon the growing citizens of tomorrow that the wise use of natural resources of a country depends upon the technological level of its people and on their ability to choose appropriate alternatives from a variety of courses open to them.

This viewpoint and approach pervade the whole text, including maps, diagrams and illustrations; and is perhaps more clearly discernible in the exercises and activities suggested at the end of each chapter.

Exercises in the book are by no means devoted entirely to mechanical recall or memorization of facts. They are geared to certain widely accepted educational objectives

In the first place, evaluation attempted through a variety of exercises has been visualized as an integral part of the process of learning itself. Here it aims at the revision and review of what has been learnt in each chapter. This should help students in crystallizing and consolidating their ideas. Primarily, it strives to draw their attention to concepts and ideas that are basic and meaningful.

These tests aim at introducing students to proper study habits and equipping them with better intellectual skills viz., selecting or choosing, comparing, contrasting, discriminating, ranking, and matching. Above all, they aim at helping students to apply knowledge to new situations. Exactness or precision is their keynote.

The usual essay type tests are also equally important to provide students with the necessary opportunities to organize and synthesize their ideas around broad but well-defined topics. Here again, the emphasis should be not on length or bulk, but on logic, sequence and pointedness. The exercises thus indicate to a certain extent what to teach, how to teach, and to what purpose.

The textbook is not an encyclopaedia, or the final word on any topic. It is only a common point of departure to enter into more specific and meaningful activities and learning experiences suited to situations that would vary from class to class.

It is from this point of view that the inclusion of a few suggested extended activities, further readings, and available audio-visual aids are to be viewed. They would be particularly useful to schools lucky enough to have these facilities and especially to those students who are better equipped to benefit from these activities, or whose curiosity has been sufficiently aroused.

Where many of these facilities are out of reach, the minimum that can be done is to encourage students to make the maximum use of the pictures, diagrams, maps, graphs, glossary, index, and appendices included in the book itself. For instance, questions raised at the end of captions for various pictures may require the students to seek answers either in the pictures or may even compel them to turn the pages of the text to satisfy their curiosity. In some cases they may have to think for themselves and consult their class-mates and teachers in order to arrive at their answers.

The subject of geography is required to bring the world into the classroom. The purpose of including a number of pictures in the book is, therefore, obvious. However, the actual purpose can really be served only if proper use is made of these pictures. The skills in picture reading are, in fact, as important as the development of map skills.

Finally, the core of geography lies in maps. A large number of maps, sketches, diagrams, and graphs have been included in the book. Special exercises and activities have been provided for, mainly to help students acquire the skills of interpreting them. Activities suggested such as the making of maps and cartograms are a part of the development of these skills.

Any suggestions towards the improvement of the book would be most welcome.

EDITORS

UNIT ONE

North America

EXTENDING *between 7°N and 84°N, the continent of North America stretches well over 8,400 kilometres from north to south. With such a big size and great latitudinal extent, the continent naturally presents a great variety of relief and climates.*

Varied though they are, the basic relief features of the continent are broad and simple. On the major landforms of the continent are laid, as it were, a variety of natural features. They lend spectacular scenic beauty and grandeur to the landscape. Glaciation, wind and water erosion, volcanic activity, underground drainage and sea waves have, all, played their part in land-sculpture. Many of the landforms carved out by these agencies are among the largest of their kind in the world.

The continent is no less rich in its wealth of forests, fisheries and minerals. It is a storehouse of metals, fuels and sources of energy—coal, oil, natural gas, uranium and water-power. Huge are its reserves of metallic and industrial minerals such as iron, copper, gold, silver, lead, zinc, nickel, cobalt and asbestos.

If Nature has been exceptionally kind to this land, the achievements of man, belated though they are as compared to the Old World, are perhaps even more significant.

The network of trans-continental railways, highways and other modern means of communication, the engineering marvels involved in the construction of the Panama Canal, the St. Lawrence Seaway and the Grand Coulee and Hoover Dams are but a few examples. Equally impressive are the big urban and industrial centres with their skyscrapers. They remind us what man under favourable conditions can achieve with industry and imagination in the short span of three centuries and a half. Prior to this, it was a land of igloos, wigwams, huts and caves, with a notable exception of a relatively flourishing plateau civilization of Mexico. This ancient civilization is symbolized by stone temples reminding us of Indian temples and Egyptian pyramids.

In fact, the story of human drama has been extremely fascinating in this continent—a continent of vast resources and relatively few but industrious people. No wonder, it has come to the limelight in the mid-twentieth century, especially in industry and technology.

In the pages that follow you may seek answers to many of your questions such as:

What has made America the richest nation in the world ? Why is the international frontier between Canada and the United States the friendliest in the world ? To what extent is the division of the continent into Anglo-America and Latin America real ! Why is the United States able to export huge quantities of food grains every year ? How is it that in Mexico and Central America the high plateaus and mountainous regions are more thickly populated than the flat coastal lowlands ? What is the importance of the Panama Canal to the United States and other American countries ? Why does Canada lay more emphasis on the production of hydro-electricity than does the United States ? Why does the United States now consume less energy derived from coal than from petroleum or natural gas ?

CHAPTER 1

The Continent of North America

NORTH America, the most important part of the New World, was discovered unexpectedly when Christopher Columbus was in search of an all-sea-route to India westward of Europe. His belief in having discovered India by an entirely new sea-route made him very happy. He named the islands "the Indies" and their inhabitants "the Indians"—a mistake that has been perpetuated and regularized only through constant usage.

The subsequent amendments, viz., "the West Indies" and "the Red Indians" or "American Indians" were only a partial attempt to correct the original mistake.

Columbus, however, would have been far happier had he realized that he had discovered an altogether new world. This new world was almost uninhabited and virgin, several times bigger and potentially richer than India or the East.

The North American continent, more or less triangular in shape, tapers down towards the south. It is flanked by the Arctic Ocean on the north, the Atlantic on the east and the Pacific on the west. Situated between 7°N and 84°N latitude, it lies in the Northern Hemisphere. With an area of about 24 million square kilometres, it is the third largest continent in size, next only to Asia and Africa.

Its immense size and great latitudinal extent ensure variety of climates, vegetation and soils. Facing the most densely peopled parts of Europe and Asia across the North Atlantic and the North Pacific respectively, the continent enjoys an ideal location in respect of international trade.

Major Relief Features

The major landforms of the continent are (*i*) the Western Cordilleras, (*ii*) the Appalachians, (*iii*) the Great Interior Plain, (*iv*) the Canadian Shield and (*v*) the lowlands along the Atlantic and Pacific coasts.

The Western Cordilleras constitute, as it were, the backbone of the entire land mass of the continent. Stretching from Alaska in the north-west they extend through South America right up to its southernmost tip. In the north-western extremity the Western Cordilleras consist of the Alaskan and the Brooks Ranges. It is here that they reach their highest altitude of 6,187 metres in Mt. McKinley.

In Canada they consist of the Pacific Coast Ranges and the Rocky Mountains. The eastern edge of the Rockies in Canada is about 1,000

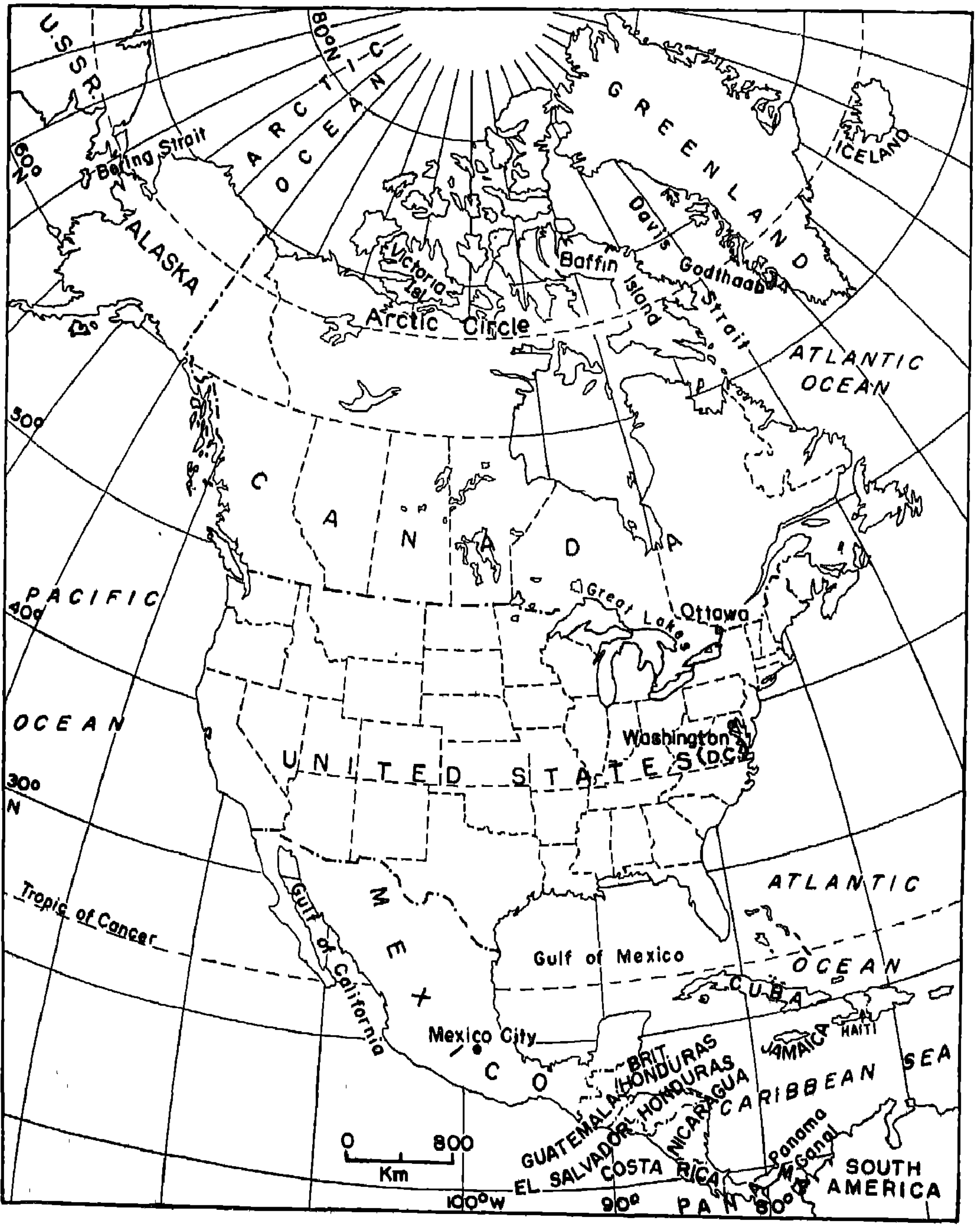


Fig. 1. North America—Political Divisions

Note the major countries of North America. Which two countries belong to Anglo-America ? In what respects do these countries differ from the rest ?

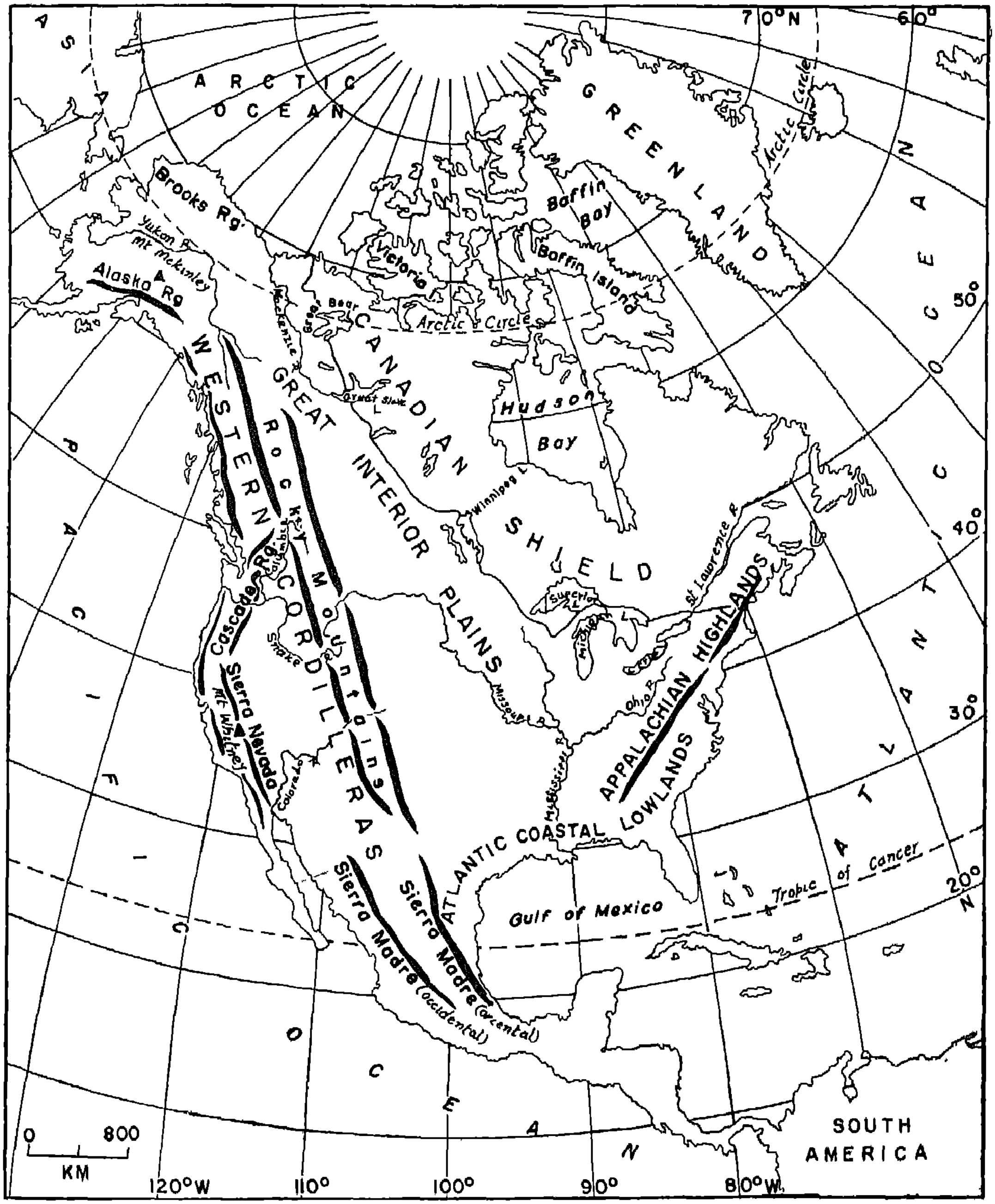


Fig. 2. North America—Major Relief Features and Physical Divisions

Study carefully the major relief features of North America Which physical division forms the backbone of the continent ? Which are the two most important basins of the continent ? In what ways do they differ from each other ?

kilometres inland. In the United States, the Rockies swing further inland more than 1,600 kilometres from the coast. Here the Cordilleras consist of three distinct ranges. The Coast Ranges in the west overlook the Pacific. The middle range, not far from the Coast Ranges, consists of the Cascades in the north and the Sierra Nevada in the south The Rockies, the farthest from the coast, form the eastern edge of the Cordilleras.

They extend from Alabama to Newfoundland with a south-west—north-east trend. The mountains are bordered by low plateaus and plains. These old folded mountains rarely rise to 1,000 metres above sea level. Mt. Mitchell, which is the highest peak of the Appalachians, is just 2,000 metres above sea level.

The Great Interior Plain lies between the Western Cordilleras and the Appalachians. The Mississippi, the largest river of the continent, drains the bulk of the plain southwards into the Gulf of Mexico. The Missouri and the Ohio are its important tributaries. Waters starting from the source of the Missouri travel nearly 6,400 kilometres to reach the Gulf of Mexico. The river basin of the Mississippi is characterized by fertile soils and moderate rainfall.

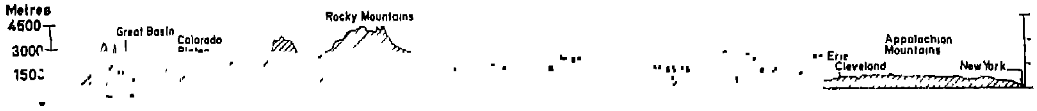


Fig. 3. An East-West Cross-section Across North America

Note that the relief presented here is highly generalized. The vertical scale is highly exaggerated as compared to the horizontal scale. Compare the profile with a relief map of North America. What is an intermontane plateau ?

Enclosed by the ranges of the Cascades and the Rockies is the intermontane plateau of Columbia. Made up as it is of the lava flows, it partly resembles the Deccan trap region of India. The Colorado Plateau, further south, is essentially due to a gradual uplifting of the land. The Great Basin lying between the Sierra Nevada and the Rockies is the largest area of inland drainage in the whole continent. Mt. Whitney which lies in the Sierra Nevada is the highest point of this part of the Cordilleras. It rises 4,418 metres above sea level.

Various ranges come together in North Mexico to form the Sierra Madre and the Central Plateau of Mexico. Further south in Central America, mountains are reduced to a low broken ridge, especially in Panama. This has partly enabled the construction of the Panama Canal across the narrow isthmus.

The important rivers of the Western Cordilleras are the Yukon, the Frazer, the Columbia, the Snake, the Sacramento, the San Joaquin and the Colorado.

The Appalachians of the United States and Canada form the old worn-down low mountains of the continent along its eastern edge.

The north-eastern part of the Great Interior Plain is bounded by the Great Lakes—L. Superior, L. Michigan, L. Huron, L. Erie, and L. Ontario. These lakes together with the river St. Lawrence form an important drainage basin. With a natural outlet to the Atlantic Ocean, it provides the busiest waterway serving the heart of the continent.

The Mackenzie and the Rio Grande are the two other important rivers of the Great Interior Plain. Whereas the former flows northwards to join the Arctic Ocean, the latter drains southwards into the Gulf of Mexico.

The Canadian Shield surrounds the Hudson Bay, covering nearly half the area of Canada. It is a rugged, highly glaciated region with uneven topography, and is studded with thousands of lakes—big and small. The region which is a storehouse of metals, forests and water-power, is drained into the Hudson Bay by several rivers.

The Coastal Lowlands along the Pacific are narrow and discontinuous. The coastal plains along the Atlantic are, however, continuous and wide, especially in the United States. They are widest along the Gulf Coast.

Greenland, which is situated to the north-east of the mainland, is the largest island of the world. To its west are a large number of islands lying within the Arctic Circle, north of Canada. These islands are almost uninhabited.

In the tropical waters of the Caribbean Sea are several small islands collectively known as the West Indies. Most of these islands represent the peaks of the submerged mountain ranges. The low islands among them are generally of the coral origin.

Varied Landforms

The ice-caps of Greenland and the glaciers of Alaska are among the largest in the Northern Hemisphere. The innumerable glacial lakes of Canada together with the Great Lakes, hold nearly half the fresh water of the world. Niagara Falls, well-known for its majestic beauty, is also an inexhaustible source of water-power, shared by Canada and the United States.

Several land features connected with the volcanic activity in this continent are among the most spectacular in the world. They include hot springs and the Old Faithful—the world's largest geyser—located in the Yellowstone National Park The active volcanoes of Mexico and Hawaii are also among the largest of their kind. Crater Lake of Oregon, on the Pacific Coast, is similarly large and impressive.

Natural bridges and stone arches of Utah and badlands of South Dakota are some of the fascinating landforms of the semi-arid and arid lands of the interior. The Grand Canyon of Colorado is famous for its rugged beauty.

The narrow but deep Hudson Rift Valley is yet another interesting feature. Its economic significance lies in providing the world's largest natural harbour, namely, New York. Moreover, it presents an easy access to the Great Lakes.

The underground caves and caverns of Carlsbad, New Mexico, and the Mammoth Caves in Kentucky are essentially due to the fantastic work of the underground drainage.

The cliffs and fiords of the Pacific Coast are perhaps rivalled by the palm-backed beaches of the Atlantic in Florida, Bahamas and the low islands of the West Indies. They are among the leading attractions for the world's tourists.

Climate

In general, the temperature belts lie across the continent in an east-west direction.

Along the Arctic Ocean lies the region of cool, short summers and freezing winters. The summer temperatures hardly rise above 10°C. Unlike the tundra region, the ice-cap of Greenland is a region of constant cold.

To the south of this belt lies a zone characterized by mild summers and cold winters. The summer temperatures range between 10°C and 20°C. The region embraces the central and southern parts of both Alaska and Canada together with elevated parts of the Western Cordilleras in the United States.

The narrow belt along the Pacific Coast extending from southern Alaska to South California is a region of mild summers and cool winters.

The large part of the northern United States east of the Rockies has short, hot summers and cold winters. The mean summer temperatures rise, well over 21°C.

To the south of this belt lies a broad zone of hot summers and cool winters. The region extends westwards, covering large parts of the Western Cordilleras.

The belt along the Gulf of Mexico and California, extending across the Central Mexican Plateau is a region of hot summers and mild winters.

The rest of Central America and the West Indies is a tropical region which is always hot.

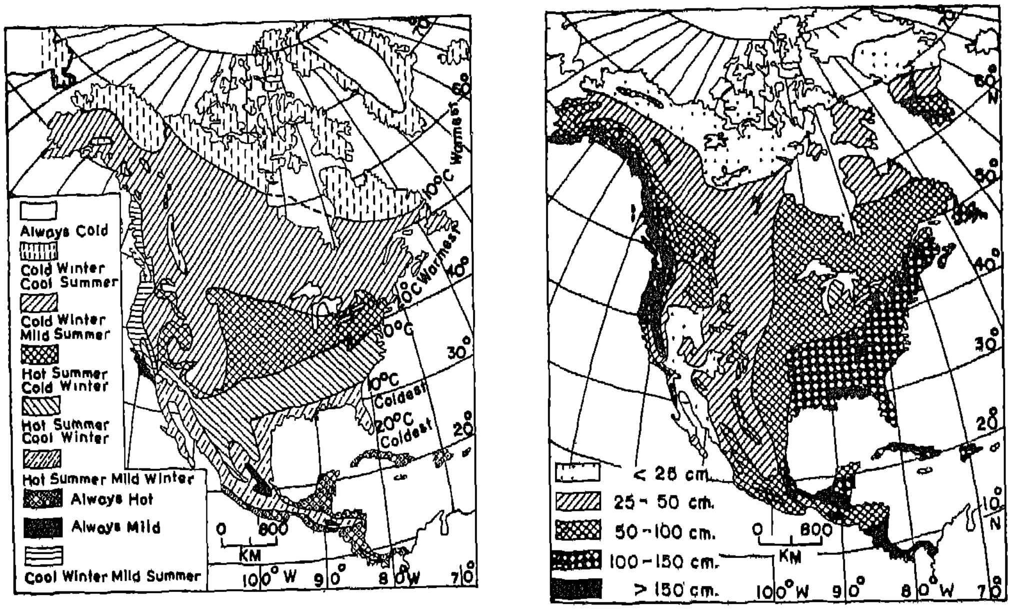


Fig. 4. North America—Distribution of Temperature and Precipitation (After Parkins)

Compare the two maps carefully and note the significance of 100°W meridian. How would you account for very large areas with inadequate and scanty precipitation in the western half of the continent ?

The Central Mexican Plateau and southern California in the United States enjoy mild climate.

The heaviest rainfall, over 150 centimetres, is along the Pacific Coast of southern Alaska, Canada and the north-western United States. The westerlies are the predominant winds. The north-east trades cause heavy rains in the south-east. They bring rains to Louisiana and Alabama in the southern United States, the Caribbean coastal lowlands of Mexico, parts of Central America and the West Indies.

Heavy rainfall, ranging between 100 and 150 centimetres, is concentrated mainly along the Atlantic coast from Newfoundland to parts of the West Indies and Central America, through the South United States. The western mountains of Canada also receive heavy rainfall.

A moderate rainfall, varying between 50 and 100 centimetres, is received in most of the remaining parts of the eastern half of the continent —from Canada to Mexico. The interior parts of the Cordilleras in Canada and the Sierra Madre Occidental also receive moderate precipitation.

The regions getting inadequate rainfall of 25 to 50 centimetres are confined mainly to the western interior of the continent. It covers the western prairies, the Great Interior Plains and parts of the Rockies including the Plateau of Columbia.

Scanty rainfall, less than 25 centimetres, is confined to the Peninsula of California, the Great Basin, the Plateaus of Colorado and Columbia, along the northern coasts of Canada, and the Arctic islands including northern Greenland.

Natural Vegetation

The tundra vegetation belt along the northern coast of Canada swings as far south as central

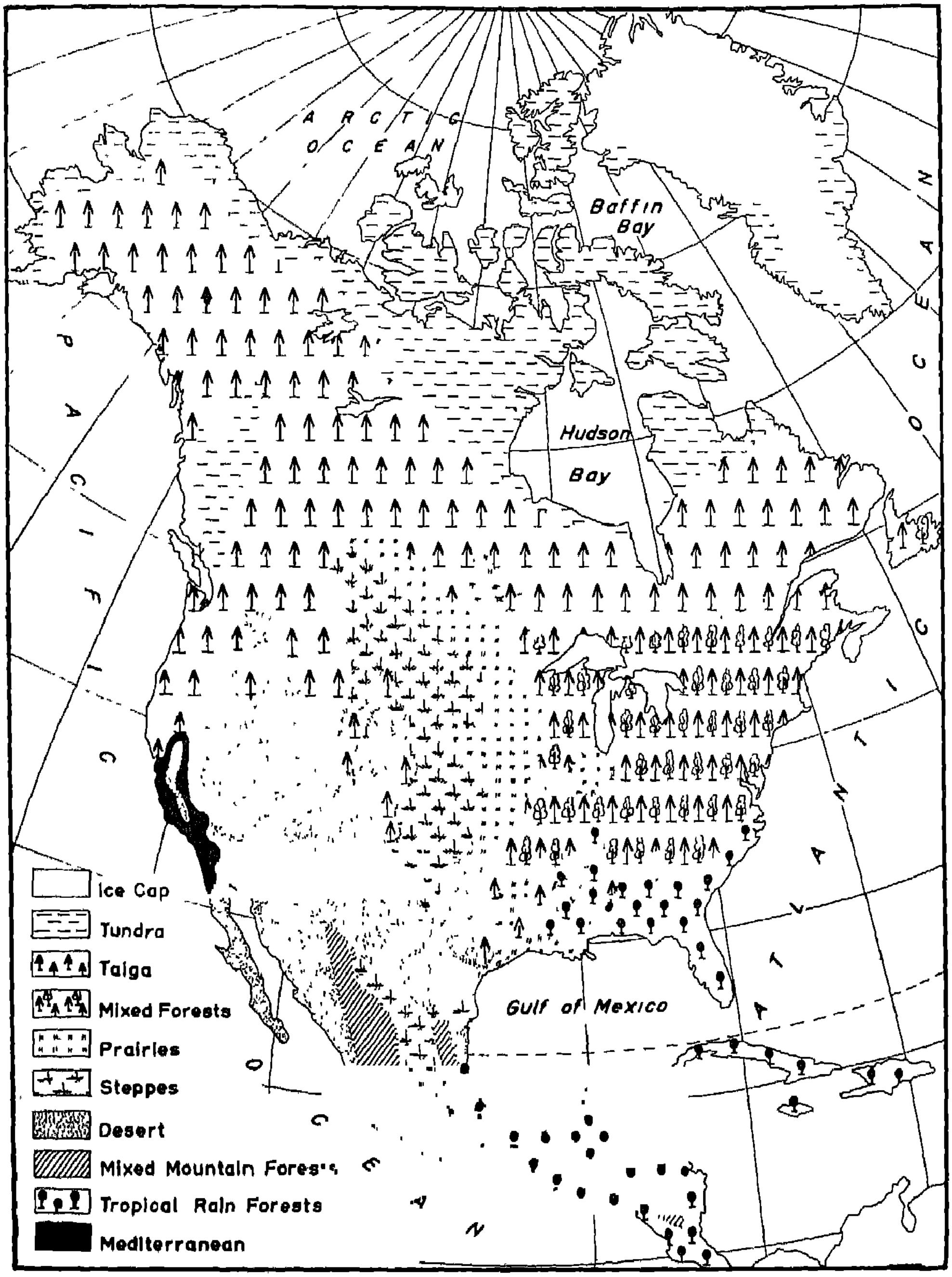


Fig. 5. North America—Natural Vegetation Belts

Note the various natural vegetation belts of this continent. Which belt is suitable for stock-raising and wheat farming ? Which areas do you think must have been cleared for agriculture ?

Labrador. It covers all types of vegetation that is generally found beyond the timber-line. Lichens, however, dominate this part. The region also abounds in grasses and certain broadleaved plants. The caribou is the most common animal of this region. The musk ox, though few in number, is not uncommon in Greenland.

Next to the tundra lies a broad belt of the taiga vegetation. The transition from the tundra vegetation to the taiga forests is gradual. Spruce, pine and larch are the common trees. Large parts of Alaska and Canada belong to the taiga region of coniferous forests. Prominent among the animals of the taiga are the caribou, beaver, silver-fox, lynx, and timber-wolf.

The taiga vegetation is followed in the south by mixed forests—coniferous and broadleaved deciduous. This region is further divided into beech-maple and pine forests of the north and the oak-hickory forests of the south. These forests, being dominated by the broadleaved deciduous trees, look dark and gloomy in summer when they are full of leaves. In winter, however, the leafless trees present a desolate outlook. These are essentially hardwood forests.

The warm, temperate forests along the Gulf Coast consist of cypress, red gum and tupelo tree. Longleaved pines and other conifers are also common. These forests provide timber for shipbuilding. They are a source of wood-pulp used for making paper and newsprint

Chaparral is the typical Mediterranean vegetation comprising stunted oaks, other trees, bushes and grasses. It is common in the hills of the central and southern California.

Grass is the common vegetation on the central lowlands and the interior plains. Whereas the prairie grasses belong to the central lowlands, the steppe grasses are generally confined to the interior plains. The prairie grasses are tall and

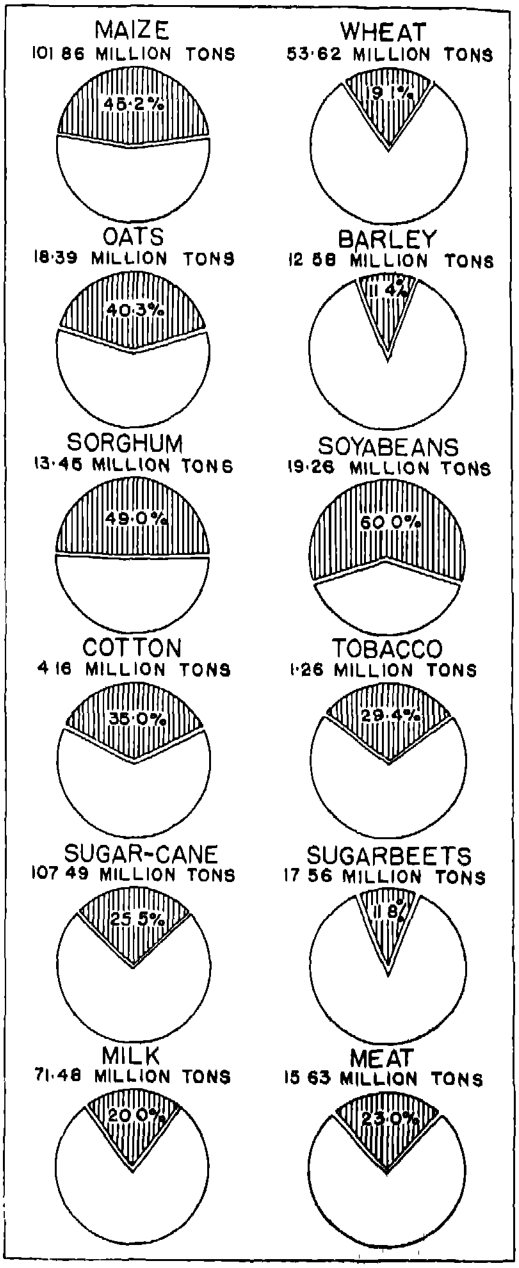


Fig. 6. The Share of North America in some of the Major Agricultural Products

Note that the North American continent leads in the production of maize, oats, sorghum, soyabeans, cotton and tobacco It ranks second in sugar-cane, milk and meat; third in barley (and potatoes); and fourth in wheat What is the most striking feature of North American agriculture ? What makes it the leading surplus food-zone of the world ?

are spread like a closely-knit mat. The steppe grasses are short and are found in patches. They gradually merge with desert scrubs.

In Central America the dominant vegetation is the tropical forest—lofty evergreen type.

Agriculture

Although only a tenth of its total area is under cultivation and no more than a twelfth of its population engaged in agriculture, North America is a leading surplus food-zone of the world. It is a leading producer of maize, oats, sorghum and soyabeans and is the largest exporter of wheat. Its production of sugar both from beet and cane is considerable. In fact, it has been the largest supplier of cane-sugar to the rest of the world. It produces large quantities of barley, rye, potatoes, and fruits. The continent produces and consumes huge amounts of animal products, especially meat and dairy products.

North America leads the other continents in the production of cotton and stands second in tobacco. It is a leading exporter of these industrial raw materials also known for their quality. The continent is, however, poor in tropical products such as tea, coffee, cocoa, rubber, spices and copra.

It must be remembered that North America is able to produce so much with relatively very few people engaged in agriculture. This is mainly due to large-scale commercial farming characterized by a widespread use of farm machines, power and fertilizers. Wide application of science is the secret of high yields, especially in the United States and Canada. Furthermore, low density of population enables this continent to export a large proportion of its agricultural produce.

With a third of its land area under forests, the continent is very rich in forest resources. It produces roundwood, wood-pulp and supports flourishing industries of paper, paper-pulp and cellulose.

The continent is also rich in fisheries both along the Atlantic and Pacific coasts. The deep-sea fishing in the Grand Banks near Newfoundland and salmon fishing in the coastal and fresh waters along the Pacific coast are well-known.

Mineral and Power Resources

The North American continent is the leading producer of copper, nickel and asbestos. In the production of iron-ore it stands next only to the Soviet Union. Its production of gold, silver and lead is also considerable.

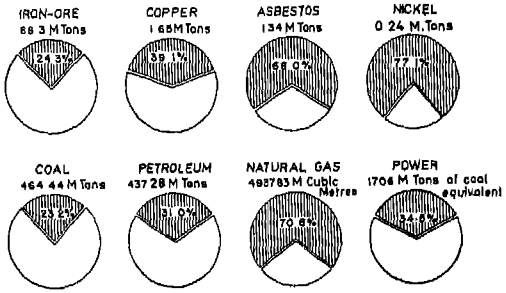


Fig. 7. The Share of North America in the Production of Important Minerals and Fuels

Note that the continent occupies a leading position in the production of copper, nickel and asbestos Equally immense are its power resources—coal, oil, water-power and also nuclear energy. What relationship do you notice between a very high standard of living of the people in this continent and the development of power resources ?

The continent leads the world in the production of petroleum, natural gas and electricity. It accounts for a third of the world's total energy. If this total energy is distributed evenly over its entire population, every person would receive and consume energy which is equivalent of eight tonnes of coal per annum Thus, the continent claims to consume the highest per capita energy in the world.

Industries

The continent as a whole is highly industrialized. The important industries of the continent are iron and steel, machine and tools, transport industries especially the manufacture of motor cars and aeroplanes, armaments, petroleum refining, fertilizers, paper and newsprint. It is also a leading producer of sulphuric acid—an index of the industrial activity of any country. The continent has a well-developed textile industry, especially cotton and synthetic fibres.

The iron and steel industry which is the backbone of a modern industrial economy accounts for nearly three-tenth of the total world production. Nearly half the passenger cars and one-third of commercial vehicles of the world are produced in North America. Equally impressive is the production of chemical fertilizers, an important ingredient of highly productive agriculture. More than half the world's wood-pulp, nearly half newsprint and two-fifths of paper are produced in this continent.

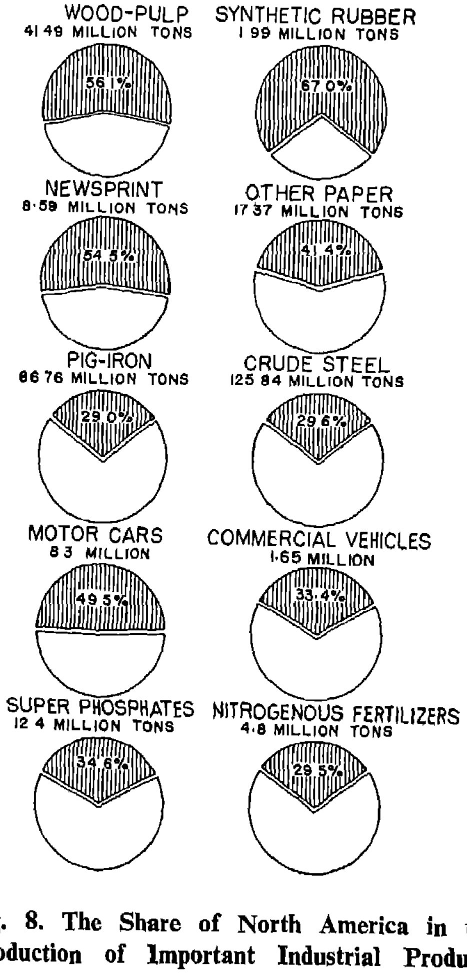


Fig. 8. The Share of North America in the Production of Important Industrial Products

Note the major industries of North America Which are the industries dependent on forest resources ? Which products in the diagram suggest that industrial and agricultural growth go hand in hand ? What suggests to you that the continent as a whole enjoys the highest standard of living ?

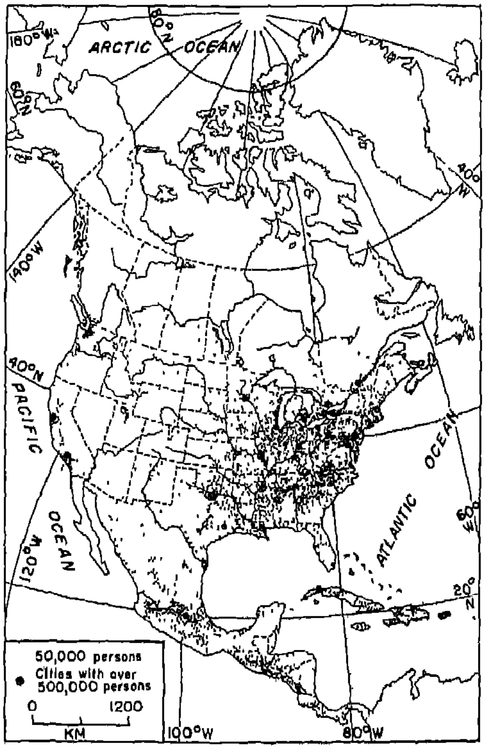


Fig. 9. North America—Distribution of Population (Adapted from K. T. Whittemore)

Note the most densely peopled parts of the continent. In what way and why is the 100°W longitude significant in population distribution ?

Population and Transport

With a total population of 288 million people, the average density of population is approximately 12 persons per square kilometre. But the

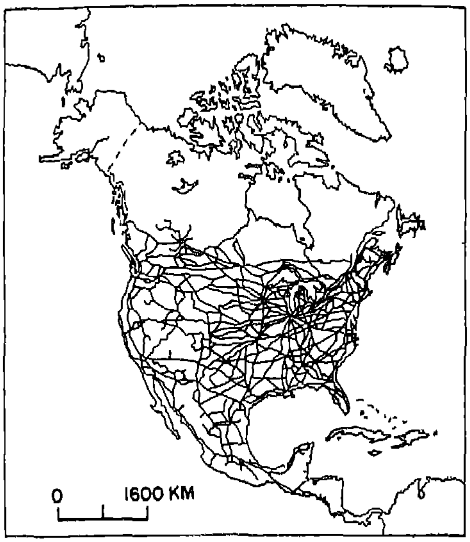


Fig. 10. North America—A Network of Railways
(Adapted from P. Bacon.)

Compare this map with that of Population in North America. What correlation do you notice between the distribution of population and the railway net work?

population of the continent is most unevenly distributed. There are vast open spaces with hardly any inhabitants. For example, cold deserts of Greenland, Alaska and northern Canada, including the Arctic islands, and the hot deserts of Colorado and Mexico are among the most sparsely peopled parts of the world. On the other hand, north-eastern parts of the United States, and the small islands of the West Indies are among the densely peopled parts of the world. The continent is known for the great metropolitan centres like New York and Chicago, and it possesses the highest proportion of urban population in the world.

The continent with its huge size, varied and widespread natural resources, a high degree of industrialization and urban concentrations, big volume of international trade together with a high standard of living presupposes an extensive and efficient network of transport.

The continent possesses more than half the passenger cars that are in use in the world. It has some of the most modern and busiest freeways of our times. Several transcontinental railways connect ports on the Atlantic with those on the Pacific. The Great Lakes and the St. Lawrence Seaway serve the busy industrial heartland of the continent. The Panama Canal connects the two oceans making it possible for ships to cut short several thousand kilometres of journey round the Cape Horn. Air travel has been most popular in this continent, especially in the United States and Canada.

EXERCISES

Review Questions

1. *Answer the following questions briefly:*
   (*i*) Name the five Great Lakes of North America.
   (*ii*) Which is the longest river of the continent ?
   (*iii*) What is prairie ?
   (*iv*) Name the three crops which originally belonged to North America.

2. Compare and contrast:
   (*i*) The Western Cordilleras and the Appalachians.
   (*ii*) The Canadian Shield and the Plateau of Greenland.

3. Give reasons:
    (*i*) The islands discovered by Columbus were named Indies.
    (*ii*) The St. Lawrence is a busy international waterway.
    (*iii*) The Canadian Shield is a storehouse of metals, forests and water-power.
4. Complete the following statement with the most appropriate ending:
The Appalachian Mountains are economically important because they provide
    (*a*) a ready source of timber and water-power so necessary for industries.
    (*b*) natural passes easily negotiable by the modern means of transport.
    (*c*) mineral wealth which forms the basis of flourishing industries.
    (*d*) centres that attract large number of tourists both in summer and winter.
5. Give a brief and pointed account of the physical divisions of North America highlighting how they are complementary to one another.
6 Elaborate the following statement with specific examples:
"On the major land-forms of the continent are laid, as it were, a variety of awe-inspiring natural features, lending scenic beauty and grandeur to the landscape "
7. Give an account of vegetation belts of North America, bringing out clearly the relation between climate and vegetation in each belt.
8. State briefly the agricultural, mineral and water-power resources of the continent along with your own comments.

Finding Out

9. Collect information on the voyages of Christopher Columbus What things did he carry with him and what new things did he bring back from the New World ?

Cartographic Work

10. Draw a drainage map of North America and name the major rivers. On its basis describe the broad relief features of the continent.

Picture Reading

11. Study carefully pictures No. 1 to 4 and 21 and state:
    (*a*) how the Rockies are different from the Appalachians; and
    (*b*) in what way the Plateau of Central Mexico is different from that of Greenland.

Films Available

(*i*) America's Wonderlands. No. 917 3, 10 mins; English; D.T.A.
(*ii*) Climates of North America. 16 mins, English; C.H C.
(*iii*) The New World. 30 mins; English/Hindi/etc. U.S.I.S.
(*iv*) St. Lawrence Seaway. 30 mins; English; C.H.C.

Further Readings

Coysh, A. W. and Tomlinson, M. E., *North America.* (Modern Geography Series, Book IV), University Tutorial Press, London, 1964, Pp. 1-23.
*Miller, G. J., Parkins, A. E. and Hudgins, B., *Geography of North America* John Wiley and Sons, New York, 1954, Pp 3-31.

CHAPTER 2

Canada, Greenland and Alaska

The northern half of the continent of North America consists of three political units: Canada, Greenland and Alaska, the last one being the largest state of the United States of America. This region, situated between the northern latitudes of 41°41′ and 83°39′, is marked with a great variety of relief and climate. Equally varied are the basic occupations followed by the peoples of this region.

CANADA

With an area slightly less than 10 million square kilometres, Canada is the second largest country, after the Soviet Union. Covered with wide wastelands of the tundra in the north and extensive taiga forests in the centre, this cold-land of the New World is very sparsely populated.

With a total population of about 19 million people, even less than that of the State of Gujarat in India, the Canadians enjoy one of the highest standards of living in the world.

The country is endowed with very rich forest resources, sizable farmlands and productive fisheries. Canada, especially the Canadian Shield, is a rich storehouse of valuable metals. Even more abundant are its water-power resources. The Canadians, although few in number, are a resourceful people. In order to exploit the plentiful gifts of nature they have developed a

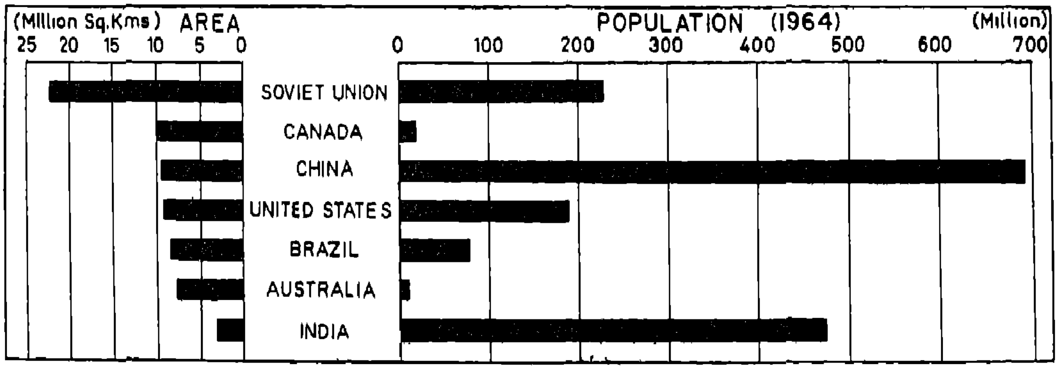


Fig. 11. Area and Population of Canada and Some Other Important Countries

Although Canada is the second largest country of the world, its population is disproportionately low. How will you account for it? State three important reasons in order of importance.

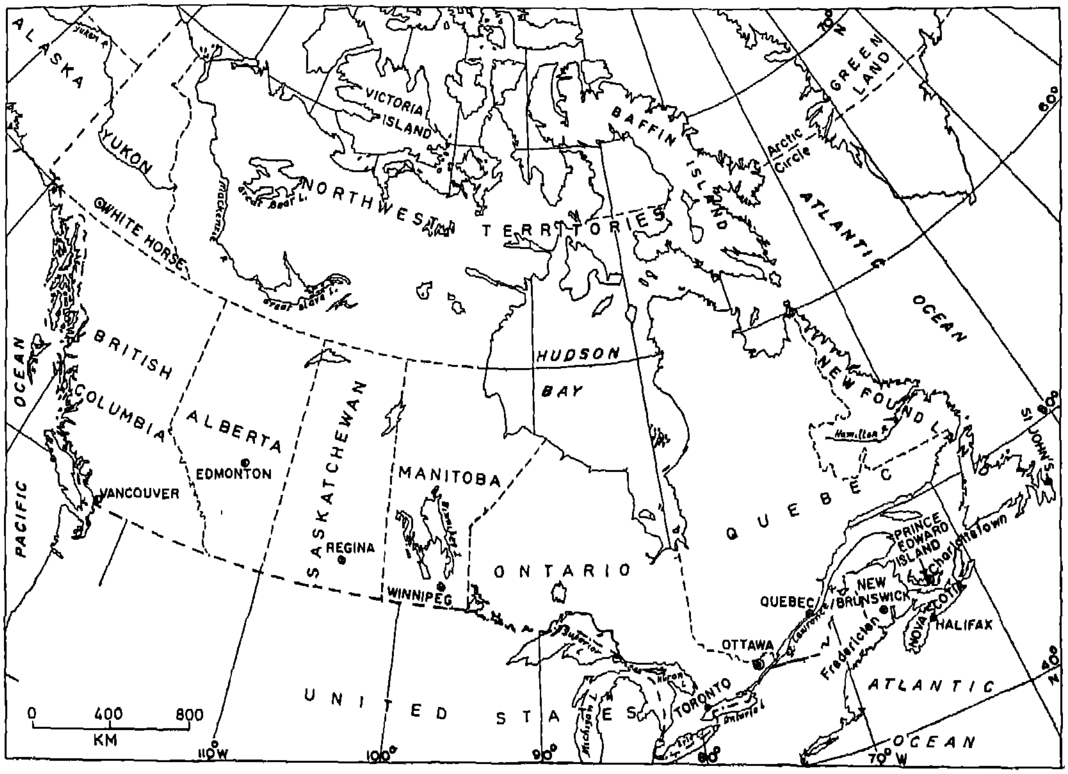


Fig. 12. Canada—Political Divisions

New Brunswick, Nova Scotia, Labrador and Newfoundland together are known as Maritime Provinces. Manitoba, Saskatchewan and Alberta are collectively called the Prairie Provinces. What makes Quebec and Ontario the two most important states of Canada ?

fairly efficient transport system of inland waterways, railways, highways and airways.

Extending between the northern latitudes of 41°41′ and 83°7′ and the western longitudes of 141° and 52°37′ the country stretches for about 4,800 kilometres from north to south and nearly 6,400 kilometres from the Pacific in the west to the Atlantic in the east. It is nearly thrice as large as India.

Canada shares its land frontiers with a single nation, the United States of America, with which it has several things in common. The long frontier between the two countries is almost entirely artificial, and for a very large part of its course is the parallel of 49°N. It is a very friendly frontier, and the two countries are known for their good neighbourly relations, co-operating with each other in as many ways as possible.

Physical Setting

Canada has a highly indented coastline, surrounded with numerous islands. It is broken by bays and inlets penetrating deep inland, especially from the north.

The topography of Canada is dominated by the Canadian Shield consisting of very old, hard crystalline rocks. Surrounding the Hudson Bay, this glaciated rocky platform covers almost half the entire country. It also includes the Arctic islands with varied relief.

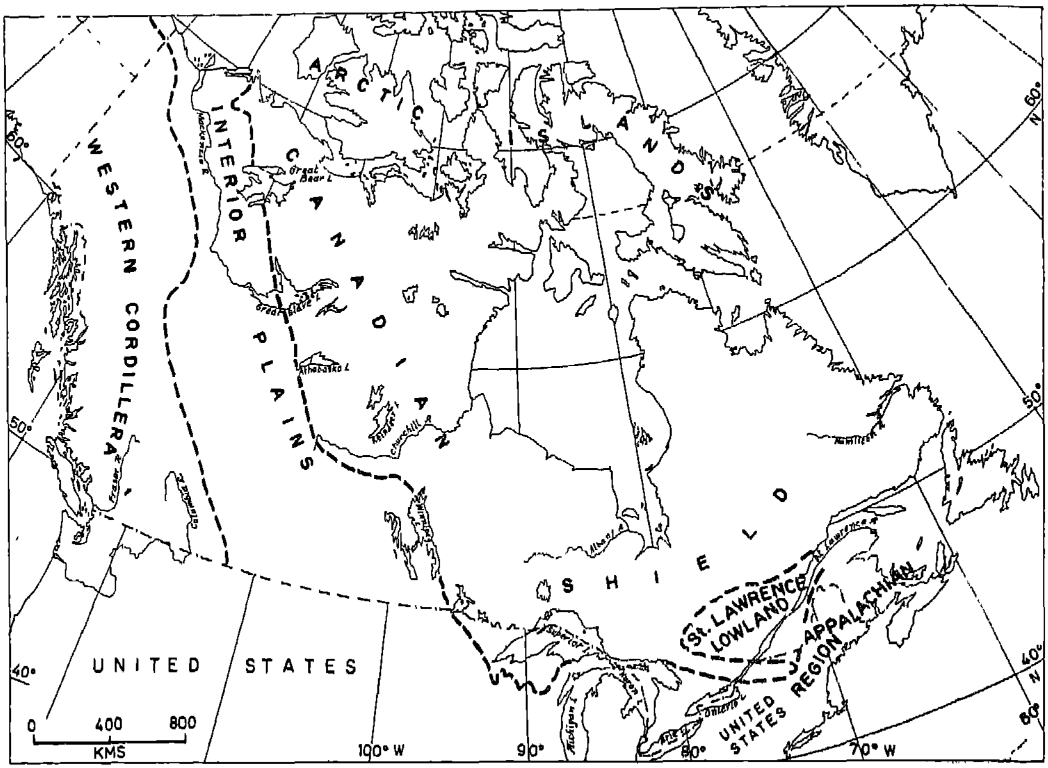


Fig. 13. Canada—Physical Divisions

Note the dominant position of the Canadian Shield. How can you conclude that these areas were glaciated ?

To the south-east of this region lie the St. Lawrence lowlands. This is the heartland of industrial Canada. Although it occupies only one-fiftieth of the whole of Canada it claims half the total population of the entire country and about two-thirds of its manufactures.

Further south-east lies yet another region which is an extension of the low Appalachian Mountains of the eastern United States. The region is also known as the Maritime Provinces of Canada.

To the west of the Canadian Shield lie the interior plains, known as the prairies. They gradually rise from 300 metres in the east to about 2,000 metres in the west towards the Rockies.

The Western Cordilleras consist of the Coast Ranges in the west, the plateaus of Yukon and Columbia in the middle and the Rocky Mountains in the east. The region is not as wide as it is further south in the western United States. The maximum heights of the peaks in the region vary between 5,000 and 6,000 metres.

Draining an area of about two-and-a-half million square kilometres, the Mackenzie, the largest river of Canada, flows northwards into the Arctic Ocean. The central Canadian Shield is drained by a number of rivers into the Hudson Bay. Prominent among the rivers flowing westwards into the Pacific are Yukon, Fraser and Columbia. Whereas the Yukon flows through Alaska before joining the Pacific, the Columbia drains the north-western part of the United States.

The most important river of Canada, however, is the St. Lawrence which drains the Great Lakes Basin eastwards into the Atlantic. Its importance lies in providing an access to the industrial heartland of the North American continent.

Climate

Nearly nine-tenths of Canada has Sub-Arctic to Arctic climatic conditions. Although summer temperatures in a few areas may be fairly high, winters as a rule are extremely cold. In the south, winter may last nearly seven months, whereas in the north it may prolong even to eleven months. The growing season is thus very short even in the south.

The winters of Canada are far more severe than those of Europe. The cold waters of the Arctic Ocean moving southwards into the Hudson Bay and the cold current of Labrador along the north-eastern coast carry the cooling influence of the Arctic far to the south. The Arctic Ocean is also the source area of cold air masses which sweep down the plains of Canada from north to south, unobstructed by any physical barrier. As a result, the 0°C January-isotherm extends southwards up to St. Louis in the United States.

The cyclones mostly originate over the Aleutian Islands and enter through the passes in the Western Cordilleras. These cyclonic storms bring in their wake heavy precipitation, both in the form of rain and snow on the west coast. But as the air descends on to the prairies, they get drier, and these areas receive relatively less of rain and snow.

The precipitation in the central prairies is less than 50 centimetres and the snow cover during the winter is less than a metre. The flat areas east of the prairies have 50 to 100 centimetres of rain. In Maritime Provinces the rainfall, under the influence of the warm moist winds of the Atlantic, increases from about 110 to 150 centimetres; and the snow may accumulate to a depth of 3 metres in Montreal and Quebec. The heaviest rainfall of about 150 to 300 centimetres is received by the windward slopes of the western mountains, running parallel to the Pacific Coast.

The major vegetation belts of Canada are the tundra, the taiga and the prairies. The tundra, which is a treeless plain covered by mosses and lichens, occupies nearly a fourth of the country in the north. To its south lie the extensive taiga forests. The immensity of Canada's taiga forests can only be imagined when one knows that these occupy two-fifths of its total area—almost as large an area as the whole of the Indian subcontinent!

The warmer and wetter Pacific coastal forests are known for the giant species of Douglas firs, rising to a height of about 100 metres.

The treeless prairies with their typical grasses extend from the Red River in Manitoba to the foothills of the Rockies in Alberta. These have been converted now into wheatlands.

Economic Development

With nearly half the total area classified as wasteland and another 44 per cent under forests,

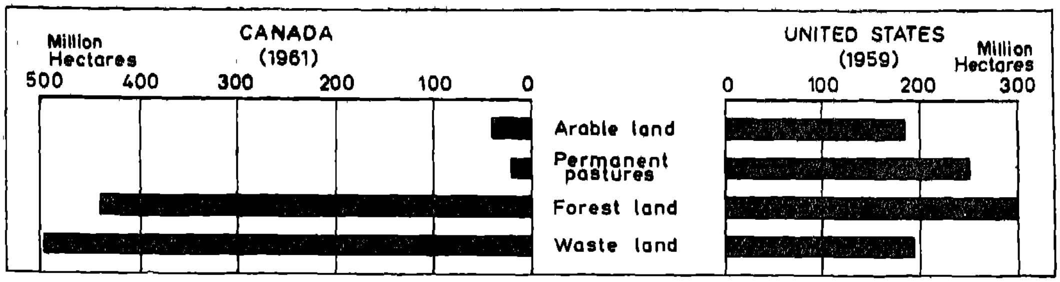


Fig. 14. Land Use Patterns of Canada and the United States

Compare the land use patterns of the two countries. Notice the dominating position of Canada in respect of the forestlands. How is it that Canada with its huge size possesses very little arable land and pastures?

Canada has brought only 4 per cent of its land area under plough. Permanent meadows and pastures occupy the remaining 2 per cent. Of the total farmlands of about 42 million hectares nearly three-fourths lie in the prairies.

Wheat, oats and barley are the principal cereal crops of Canada. In 1963, it produced over 19 million tonnes of wheat, ranking fourth in the world. The production of oats in the same year was about 7 million tonnes, standing next only to the United States. In barley its production was nearly 5 million tonnes. It exports these cereals in very large quantities.

As a result of increasing mechanization, only 11 per cent of the Canadian population is engaged in agriculture. This industry is now second to manufacturing both in respect of employment and national income. Although the number of people engaged in agriculture is becoming less and less, the total agricultural produce has been growing because of increasing use of machines, power and fertilizers. Fruit gardening is another important aspect of Canadian agriculture.

Dairy farming is an important industry especially in the St. Lawrence and Great Lakes basin. Stock breeding is the main activity in the foothills of the Rockies Canada has over 11·5 million cattle on its farms, with a total production of 8·4 million tonnes of milk per annum.

With a coastline of over 30,000 kilometres and a large number of lakes and rivers containing more than half the world's fresh water, Canada stands sixth in the world for total fish catch. It was about 1·2 million tonnes in 1964.

Canada leads the world in the output of asbestos, nickel and platinum. It is the third largest producer of gold and zinc. The country holds the same position in the manufacture of aluminium from imported bauxite. Availability of abundant hydro-electricity is an enviable asset not only for the manufacture of aluminium but also for the rapid industrialization. It is the fourth largest producer of silver, lead and cobalt. Canada is also an important producer of copper, tin and iron-ore. Its production of iron-ore has been 19 million tonnes in 1964 and is expected to rise considerably in the years to come. Most of these metallic ores are confined to the Canadian Shield—the storehouse of metals.

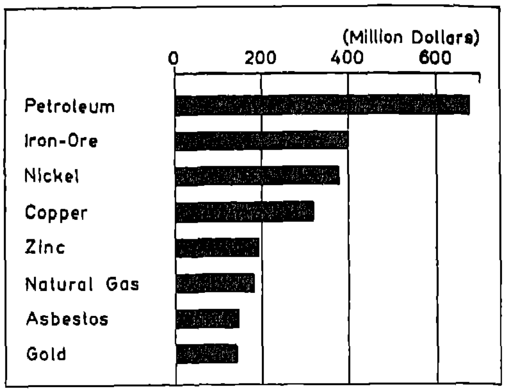


Fig. 15. Mineral Production of Canada by Value in 1964

Natural gas and petroleum are the important sources of industrial power. The country is even richer in water-power and uranium. What suggests to you that Canada has a bright industrial future ? What are the industrial uses of asbestos and copper ?

The coal deposits of Canada are in Nova Scotia and lignite in Saskatchewan. Petroleum was discovered in western prairies in 1947. By 1964, its production had risen to 37 million tonnes. The country is the third largest producer of natural gas, after the United States and the Soviet Union. The uranium deposits of Canada are claimed to be the largest in the world. It ranked third in the production of uranium-ore in 1963.

Canada's water-power resources are very vast. It ranks third both in potential and developed water-power, and second in per capita production. The development of its water-power resources is due to a combination of several favourable factors. The extensive ice sheets are a potential source of water. An exceptionally large number of lakes act as natural reservoirs of water, and help to regulate the flow of river-water. Numerous falls provide good head of water, especially along the edge of the Canadian Shield. Presence of a huge industrial market has

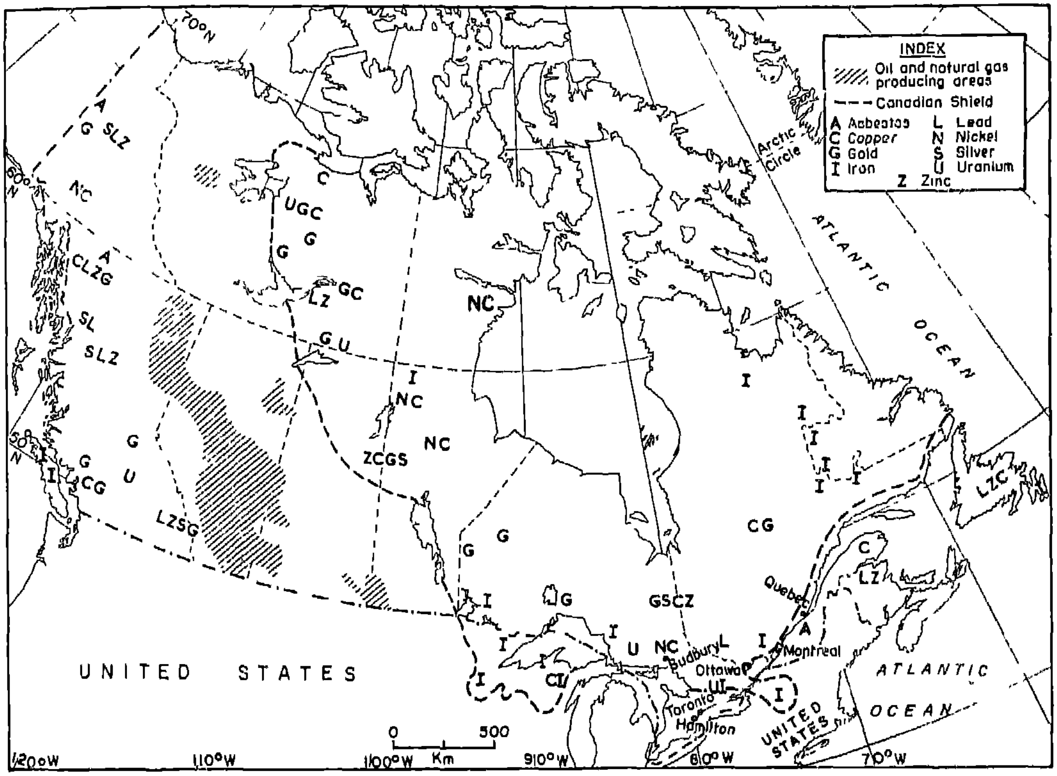


Fig. 16. Canada—Mineral Deposits and Industrial Centres

Note the location of oil and iron deposits of Canada. Are the industrial centres close to the mineral deposits ? How would you explain the concentration of industries in the Toronto-Montreal Region ?

further contributed to its rapid development. Niagara Falls is the single largest source of water-power in North America. Its power is jointly exploited by Canada and the United States.

Only a few years ago, Canada was engaged mainly in producing and exporting primary products. But now it has become an important producer and exporter of manufactured goods as well. One-third of Canada's population depends directly on industry, accounting for nearly a third of its national income.

Metallic minerals, forest products, and availability of cheap and abundant power have laid the foundation of its industrial prosperity. Inflow of American capital and proximity to a rich market across the border have also contributed to its industrial boom. Canada is the leading producer of newsprint, accounting for over half the world's total output. It stands second in the combined production of paper and newsprint. In addition, the country exports wood-pulp in large quantities. Its metal fabricating industry has been growing rapidly. Canada now manufactures automobiles, transport equipment, electrical goods and machinery. Equally important are its chemical and petrochemical industries.

Railways are an important means of transport in continental Canada. The two trans-continental railway systems are the Canadian National Railways and the Canadian Pacific Railways.

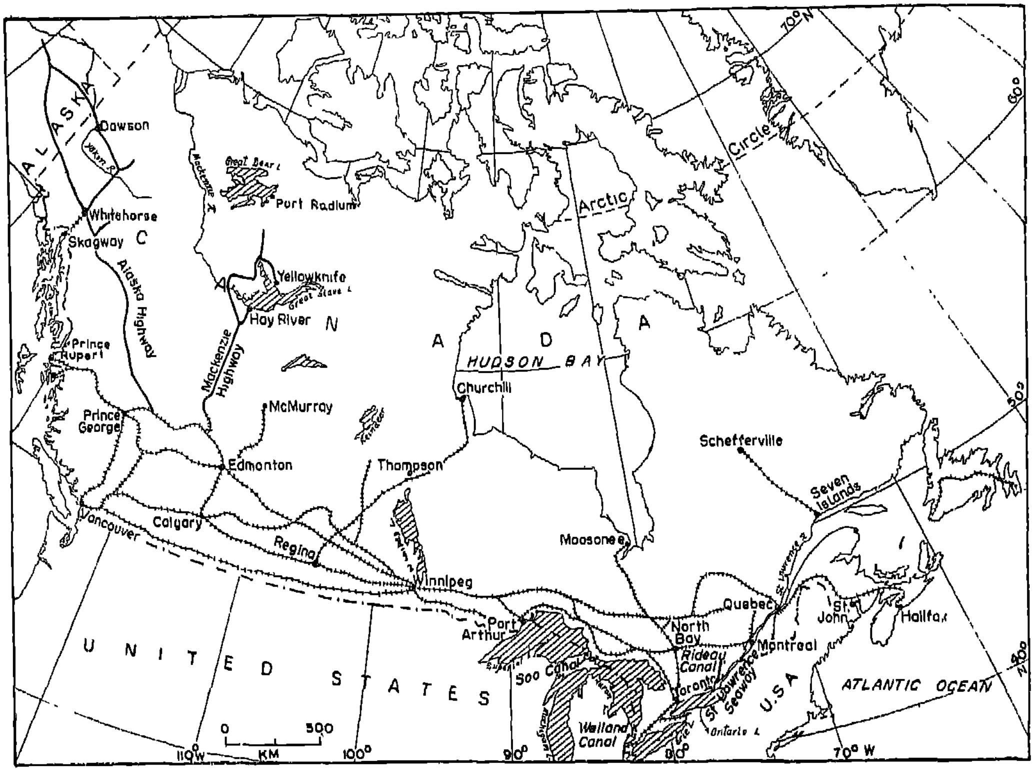


Fig. 17. Canada—Land and Water Transport

Note that the railways are confined to a narrow belt along the southern borders. What part do the Great Lakes and the St. Lawrence River play in the economic prosperity of Canada ?

Whereas the former is owned by the government, the latter is entirely a private concern. These two railways compete with each other in certain areas and co-operate in others where duplication is not profitable

Railways have played a great part in opening up the prairies for large-scale agriculture and settlement. Today, however, railways are becoming less important as a means of passenger transport, because travel by automobiles and aeroplanes is becoming more and more popular. In Canada there is a motor car for every four persons In this respect it follows its more prosperous neighbour—the United States of America. With growing road traffic, Canada has to spend large amounts on maintenance of its highways.

Inland-waterways play an important role in the Canadian transport system. The St. Lawrence Seaway constructed jointly by Canada and the United States provides a water channel eight metres deep from Montreal to Lake Superior. It can now be used by ocean-going vessels up to 20,000 tonnes and the Lake ports have now become ocean ports as well. This project on the North American continent, involved construction of locks and dykes, improvement of communications and the production of hydro-electricity on a gigantic scale. The Mackenzie and Yukon rivers in the north-west are also open to traffic for a part of the year.

Air-traffic is increasingly becoming popular, especially in its northern parts where no other means to transport is available. Air planes maintain contacts with mining camps and fur posts, conduct mining exploration and geophysical surveys and protect forests from fires. The only ports open all through the year are Vancouver on the Pacific and St John and Halifax on the Atlantic. However, Montreal situated on the St. Lawrence is the biggest port of international trade. Inland location and a rich hinterland are its assets.

The original inhabitants of Canada are the Red Indians and the Eskimos who today barely account for about one per cent of its total population. During the last three-and-a-half centuries Canada has been settled by people from Europe. It is a bilingual State with English and French as its official languages. Canada is an important member of the Commonwealth of Nations.

For a big country like Canada its population is disproportionately small. The overall density of population is just two persons per square kilometre. The bulk of the population, however, is concentrated in the St. Lawrence-Great Lakes Basin, southern prairies and British Columbia. The States of Ontario and Quebec account for nearly two-thirds of the total population. Nearly 80 per cent of Canada's total population lives within about 300 kilometres from its southern border.

Canada is one of the leading trading countries of the world. It stands fifth, next only to the United States, West Germany, the United Kingdom and France, in the total volume of international trade.

The major items of Canadian exports are wheat, newsprint, wood-pulp, lumber, nickel, iron-ore, aluminium and other metals. Imports of Canada are varied and consist of both raw materials and finished products.

Regions of Canada

From east to west the regions of Canada are (*i*) the Maritime region, (*ii*) the St. Lawrence-Great Lakes Basin, (*iii*) the Canadian Shield, (*iv*) the Interior Plains, and (*v*) the Western Cordilleras. In the north lies the Arctic Archipelago, which structurally is a continuation of the Canadian Shield; and is almost uninhabited.

The Maritime Region: This region includes the three maritime provinces of Nova Scotia, New Brunswick and Prince Edward Island The island of Newfoundland is yet another important part belonging to this region. Structurally, the whole area is a continuation of the Appalachian Mountains of the United States.

The region is characterized by a low but varied relief. The land is made up of hard glaciated rocks, and the uplands are practically uninhabited on account of rocky surface, infertile soil and the presence of lakes, swamps and patches of dense forests. The valleys and coastal areas are the only parts suitable for farming. The region enjoys a maritime climate with warm summers and cold winters. The rainfall is well-distributed throughout the year.

The valleys of Annapolis and Cornwallis are known as the 'Great apple orchard of the world'. The Prince Edward Island is called the 'Million acre farm' or the 'Garden of the gulf' because of its red, fertile level lands and favourable climate for agriculture.

Besides fruits the important crops are potatoes, oats, sugar-beet and hay. Dairy farming is a well established economic activity of the region.

New Brunswick is described as the 'forest province' where numerous saw-mills operate near rivers with the help of water-power.

There are important coal mines in Breton Island, Northern Nova Scotia and Central New Brunswick. Iron-ore is imported from Newfoundland in order to manufacture iron and steel. Halifax and St. John are the two ports of the region. Being the only ice-free ports of Canada on the Atlantic coast, they serve Trans-Atlantic shipping during winter when Montreal and Quebec are ice-bound.

Newfoundland is a land of rocky, barren uplands covered with marshes and lakes. The valley bottoms are occupied by dense forests. The long, cold winters and cool summers also add to the inhospitality of the land. They make its inhabitants turn to the sea to make a living. The confluence of the cold Labrador Current with the warm North Atlantic Drift off its coasts and the presence of shallow sea known as Grand Banks, offer this island very fine fishing opportunities. Forests are an asset for the construction of fishing fleet, besides providing raw materials for the pulp and paper industries. Iron is an important mineral resource of the island St John's, the capital city of Newfoundland, is the main fishing port and a small manufacturing centre of the island.

The St. Lawrence Lowlands: This north-eastern extension of the Central Lowland region of North America includes the plains of the St. Lawrence and the Lake-peninsula lying between the Lakes Erie and Ontario. The natural vegetation of the region consists of mixed forests, coniferous and deciduous.

The region enjoys warm summers with the highest temperatures for the whole of Canada. Winters are also rather less severe as compared to the prairies in the west and the Shield region of the north. With 125 to 175 frost-free days, the region is able to account for nearly a third of Canada's agricultural wealth. Mixed farming is generally practised, but dairying is more important near the large cities. The important agricultural crops of the region are oats, wheat, barley, rye, sugar-beet, fruits, vegetables and tobacco.

The St. Lawrence provided the early European settlers with an excellent route into the interior. The early trading centres began to grow as a result of local agricultural resources. The timber of the forests, the minerals and the water-power resources of the Canadian Shield, and transport facilities offered by the Great Lakes and the St. Lawrence led to its rapid industrialization. Today it is the most important manufacturing region of Canada and is known both for the bulk and variety of its manufactures. Thus, St. Lawrence lowlands which is the smallest geographical region of Canada accounts for over half the nation's population and its leading urban and industrial centres.

Prominent among the manufactures of the region are iron and steel, machines, automobiles, agricultural implements, rubber goods, textiles, chemicals, paper, pulp, electrical goods, petrochemicals and a large number of refined metals.

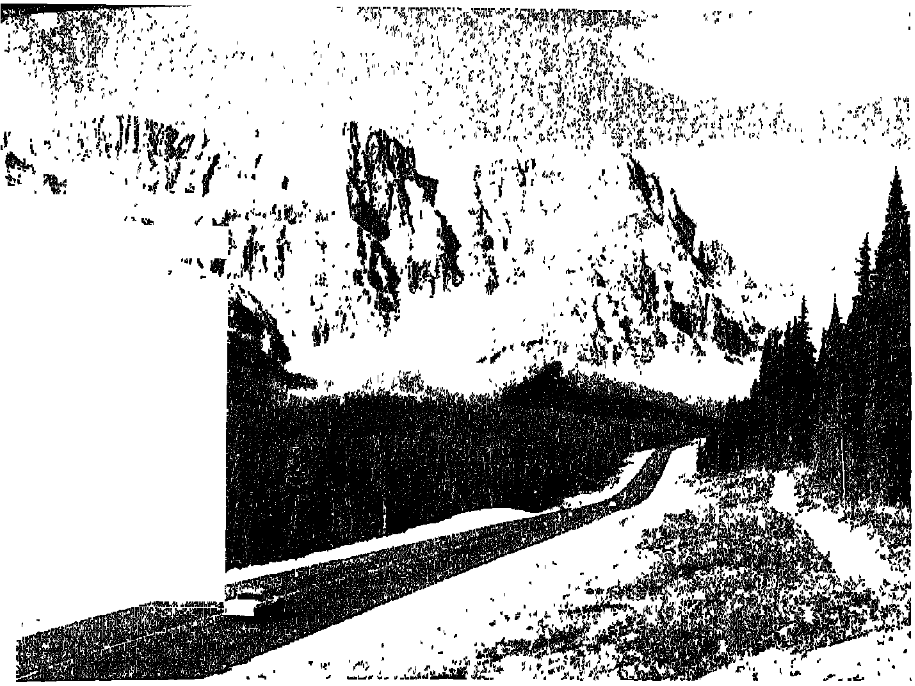
Montreal is the largest urban centre with a population well over 2 million people. It is an industrial, shipping and business centre. With a population of over 1·8 million, Toronto is the second largest urban centre Its population is larger than the whole of British Columbia, the third most populous state of Canada. Toronto is known for its light industries. The other three important centres are Hamilton, Quebec and Ottawa. Ottawa is the seat of the Federal Government of Canada. It is also a centre of pulp and paper industry. Quebec is known for cotton and leather goods.

The Canadian Shield: This region, consisting of very old rocks, was greatly eroded during the Ice Age, so that vast areas have been worn down to an almost level plain. The country west of Hudson Bay has thousands of large and small irregular lakes and numerous rivers. Many of the rivers have large water-falls which have become the source of water-power.

The southern fringe of the tundra region has long and severe winters. Most of Canada's 13,600 Eskimos live on the southern fringe of the tundra. They mainly depend on fishing and hunting, and also tame large herds of caribou. Some nickel and iron-ore is mined in this region and it is probable that oil and other minerals await development.

The great coniferous forests in the south were ruthlessly cut down in the past. Most of the timber produced at present is used for making pulp and paper. A series of towns along the southern margin of these forests are engaged in the pulp and paper industries. Attempts to introduce agriculture in this region have not succeeded, except in a few pockets.

The forest region is rich in minerals. The mining camps are, therefore, not uncommon in this region. Among these may be mentioned Sudbury which has yielded most of the world's

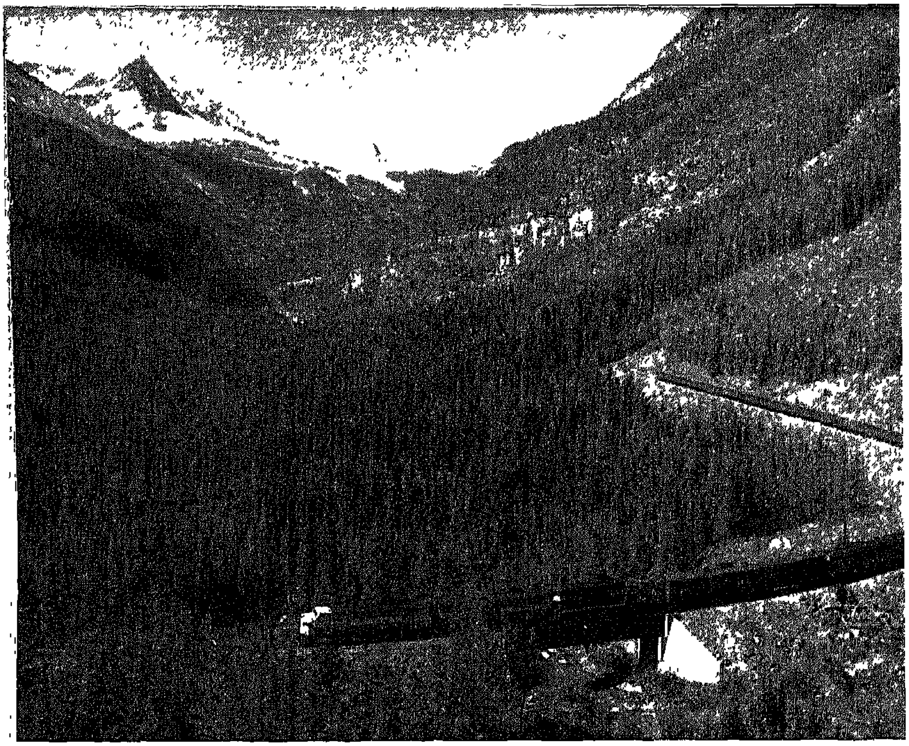


1. **The Canadian Rockies** *(Courtesy: Canadian High Commission, New Delhi)*

The Rocky Mountains which form a part of the Western Cordilleras constitute the backbone, as it were, of the North American continent. What kind of mountains are these ?

2. **A Low River Valley in the Appalachians** *(Courtesy: Canadian High Commission, New Delhi)*

Note the Holstein cows grazing in the valley of the St. John river in New Brunswick. What indicates that it is a region highly suitable for dairying ?

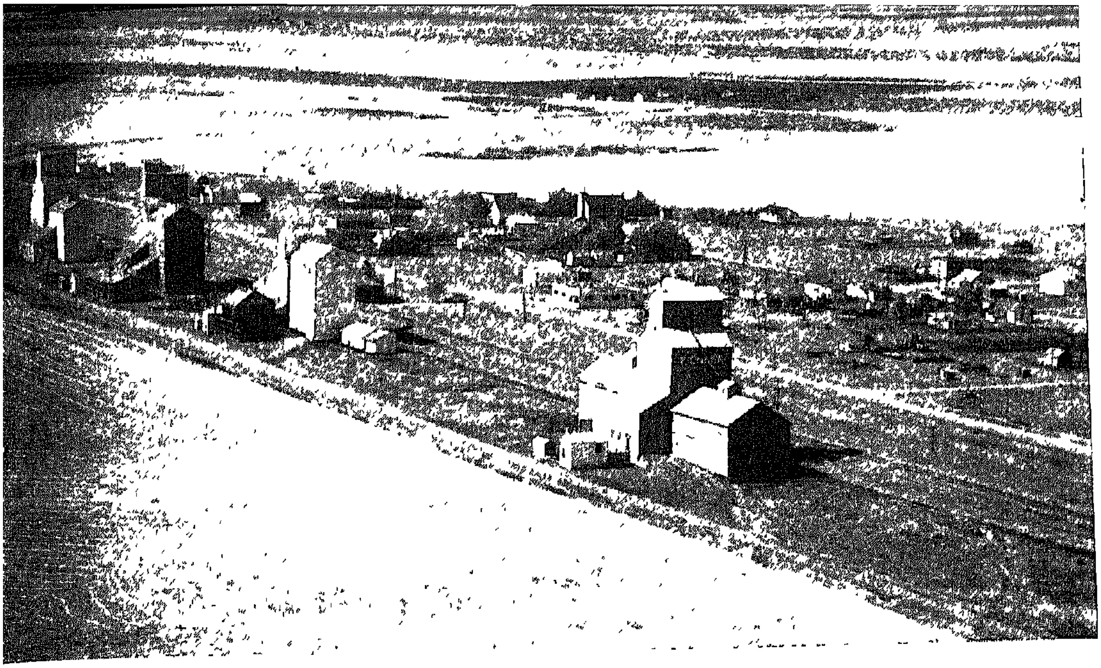


3. Canadian Pacific Train Winding through the Rockies *(Courtesy: Canadian High Commission, New Delhi)*

Note the white snow on the peaks, the thick coniferous forests on the slopes and the bridge being crossed by the train. Why is it called a transcontinental railway ?

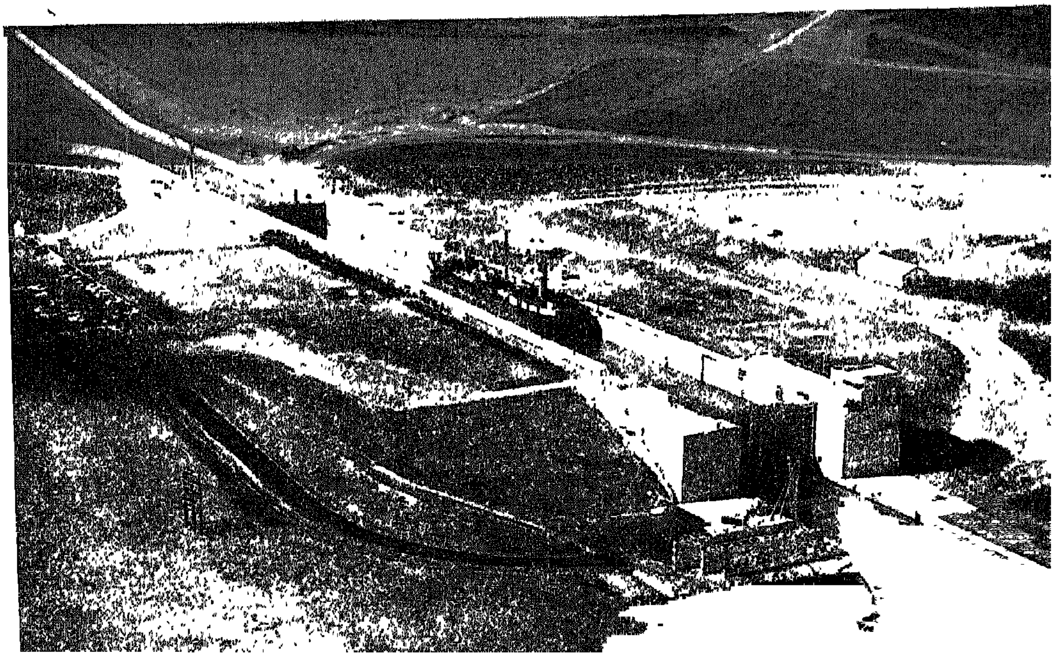
4. A Yacht in the Coastal Waters of Greenland *(Courtesy. Royal Danish Embassy New Delhi)*

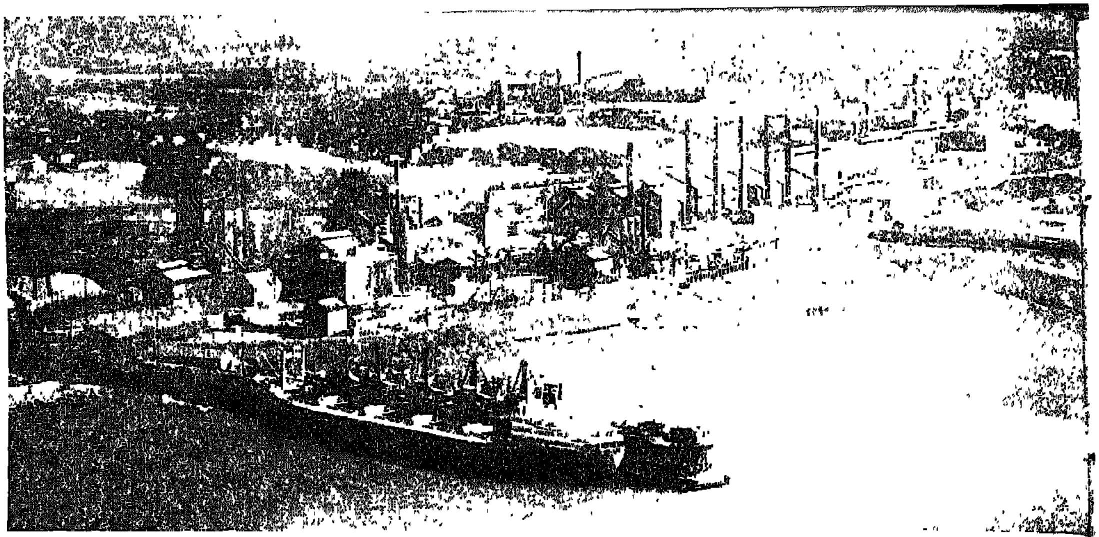
Note the precipitous cliffs rising over the sea, and the beautiful ice floes in the water. What natural resources do you see in the picture ? What season must it be ?



5. The Wheatlands of the Prairies *(Courtesy: Canadian High Commission, New Delhi)*
Note the extremely flat and level nature of the prairie lowlands What suggests to you that these treeless grasslands have now been converted into a region of mechanized commercial grain farming?

6. A Lock in the St. Lawrence Seaway *(Courtesy: USIS, New Delhi)*
This is one of the newly constructed locks on the St. Lawrence Seaway, jointly built by Canada and the United States. Fully loaded ocean freighters now call on the Great Lake Ports. Explain how a lock works and the purpose it serves.



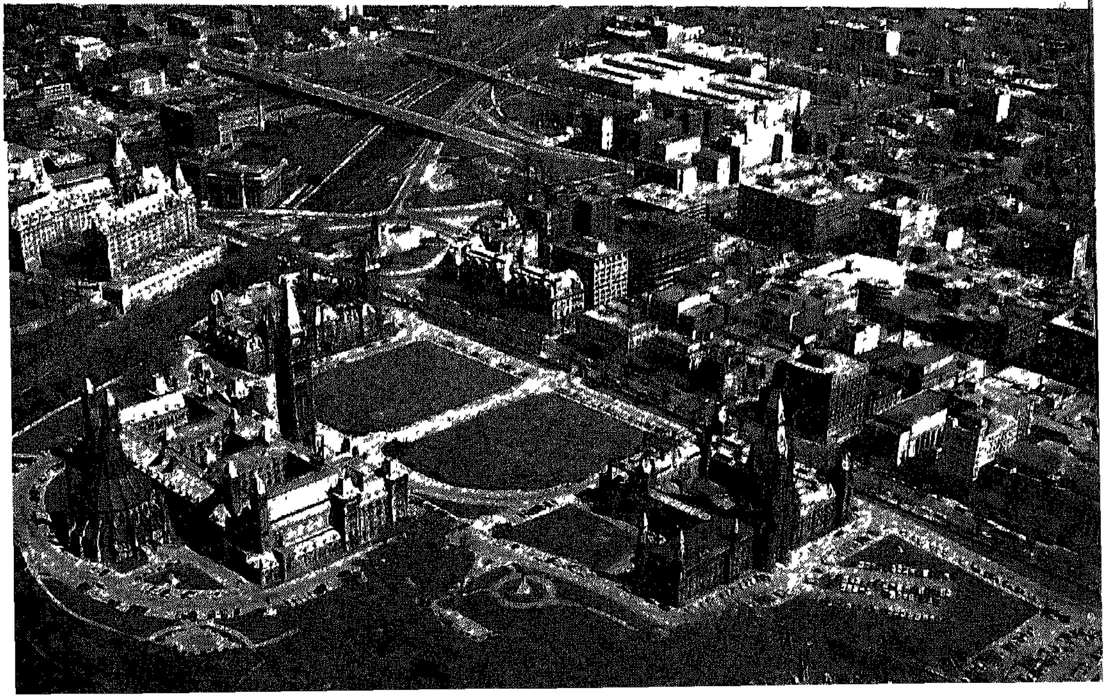


7. A Steel Plant in Nova Scotia, Canada *(Courtesy: Canadian High Commission, New Delhi)*

This new and growing steel and coal centre is located at Sydney in Cape Breton Island. This industrial and commercial town has many mills, foundries, and furnaces A spacious and sheltered harbour and the coal-mining region in the vicinity are its assets. Where from does it get the iron-ore?

8. The Seat of the Canadian Federal Government in Ottawa *(Courtesy: Canadian High Commission, New Delhi)*

This is one of the well-planned and best-kept cities of Canada Besides several paper-mills, the city is a leading timber market. Can you locate the Parliament House in the picture?



9. A Seal and the Children of Greenland *(Courtesy: Royal Danish Embassy, New Delhi)*

Note how the children of Greenland are full of life in spite of a very harsh environment. What things in the picture suggest to you that they must turn to the sea to make their living? Do you see a harpoon in the picture?

10. Fur-Seals in the Alaskan Waters *(Courtesy· USIS, New Delhi)*

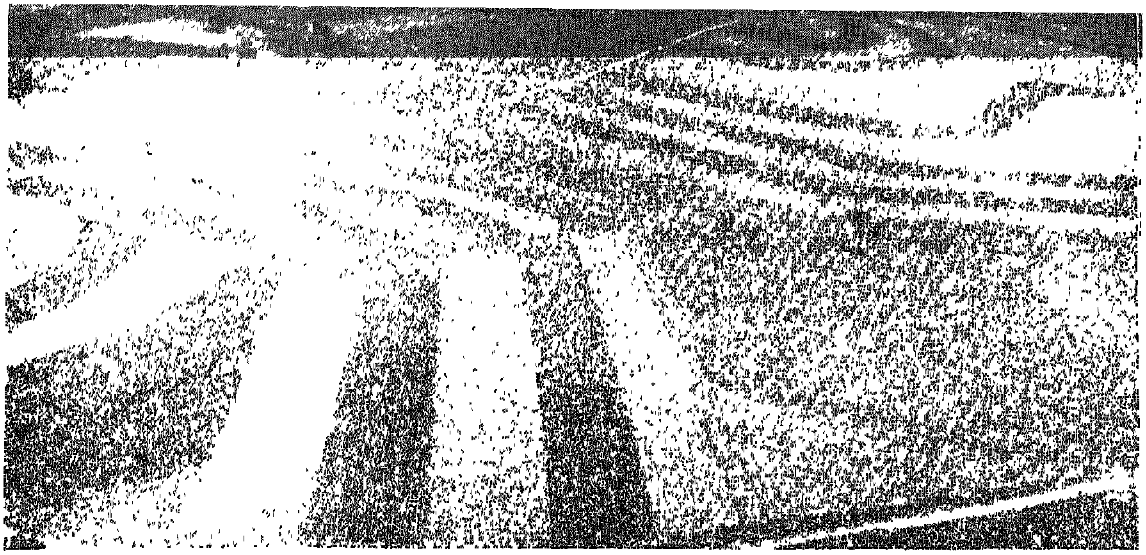
Look at the fur-seals sunning on the Pribilof Islands, also known as Fur-Seal Islands, in the Bering Sea. This is the breeding ground of over four-fifths of the world's total fur-seals. What makes seal hunting, fishing and animal trapping the major primary industries of Alaska?

11. A Cattle Corral on a Ranch in Arizona *(Courtesy: USIS, New Delhi)*

This is a cattle corral on a ranch in Arizona. A corral is a part of the ranch where animals are sorted, branded and bred. Note the American Indian cowboy in the extreme right. Why is ranching very important in the western United States?

12. An American Negro Farmer of the South *(Courtesy: USIS, New Delhi)*

This farmer raises various crops such as tomatoes, pepper, cucumbers, lima-beans, corn and melons on his farm. Today there are about twenty million Negroes in the United States, many of whom are settled in the South. Where from and how did they come to the United States?

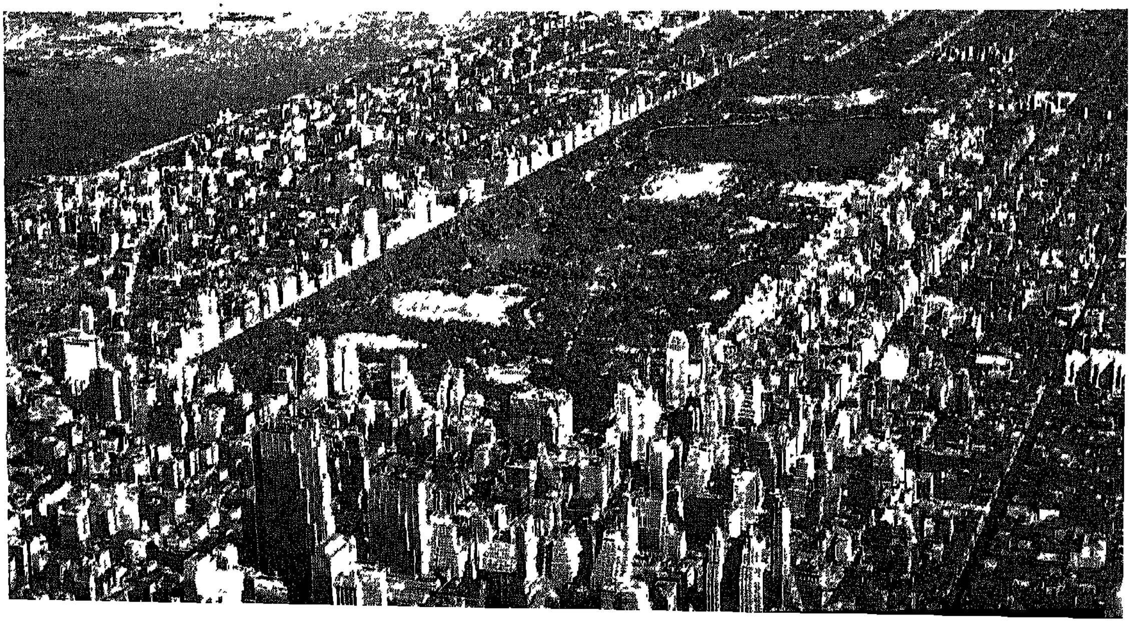


13. Stripcropping in Wisconsin, United States *(Courtesy: USIS, New Delhi)*

In a rolling to undulating land such as this the crops are fitted to the soil and to the contours of the land This practice of stripcropping prevents losses of soil and water caused through rapid run-off of rain water. Explain how it happens.

14. An Aerial View of New York City *(Courtesy: USIS, New Delhi)*

With over 8 million people within the city and 11 million in the entire metropolitan area, it is the largest and the busiest urban agglomeration in the United States. Note its skyscrapers, the Central Park, straight avenues and the Hudson river in the west. What locational factors account for its phenomenal growth?

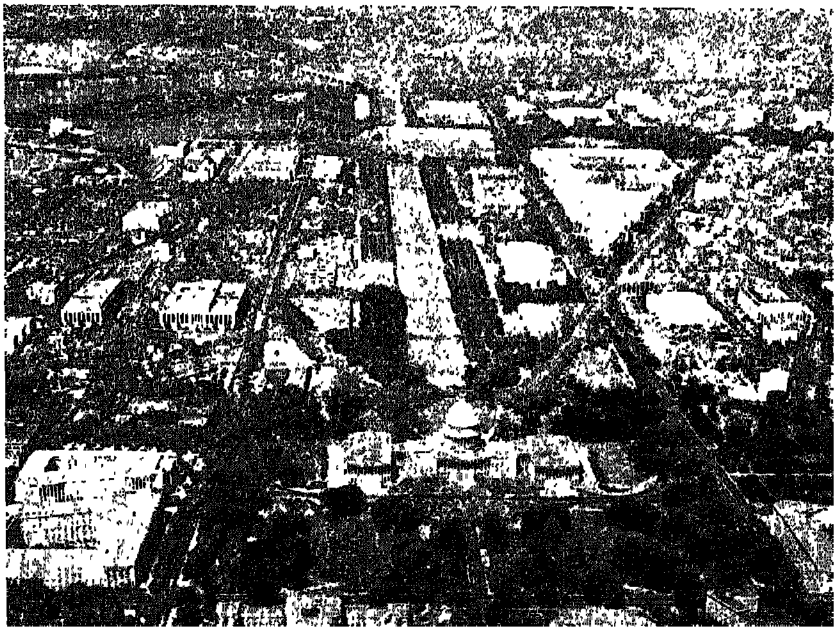


15. Harvard, the Oldest Seat of Learning in the United States
(Courtesy: USIS, New Delhi)

The University library shown in the picture contains over 6.5 million volumes, perhaps the largest collection of its kind. Note the leafless trees and snow which remains on the ground for nearly five months in a year.

16. Washington D.C., the Capital City of the United States
(Courtesy: USIS, New Delhi)

The highdomed massive building at the centre is the Capitol where the federal laws of the country are passed. The city situated in the Federal District of Columbia is one of the well-planned cities of the world. How did it get its name ?



nickel since 1900. Gold camps of north-eastern and north-western Ontario, and the gold and base metal mines of western Quebec are also well known. Iron-ore is found in northern Quebec and neighbouring parts of Labrador, besides a few other places. Uranium deposits, perhaps the largest in the world, have been found near Great Bear Lake and in the areas to the north of Lakes Huron and Ontario.

There are over 205,000 Red Indians in Canada. They are generally confined to reserves in the taiga forests. Their main source of livelihood continues to be hunting for fur. Of late, they have taken to inland fishing on somewhat commercial lines. Some of them have also taken to farming while a few of them find work in factories and offices as well.

The Interior Plains or the Prairies: The prairies occupy the southern parts of the provinces of Manitoba, Saskatchewan and Alberta. They form a triangular region of treeless grassland between Lake Winnipeg and the Rockies. In general, the plains may be said to rise in three great steps.

The first is the Manitoba lowland, a fertile plain less than 250 metres above sea level. With its deep fertile soil and moderate rainfall, it is one of the richest wheatlands of the world. Mixed farming in this area is now becoming increasingly important.

The second step is the Manitoba-Saskatchewan plain, which is about 600 metres above sea level. It is an undulating land with an annual rainfall of 30 to 40 centimetres. This, too, is an important wheat growing area, but the farmers are being encouraged to introduce new crops and rely more on animal husbandry.

The third step, or the Alberta plain, is a continuation of the high plains of the United States. Its elevation ranges between 750 and 1,200 metres above sea level. The terrain as a whole is more broken with deep valleys and broad plateaus. Rainfall is scanty and cattle ranching is the chief occupation. Drought resisting varieties of wheat are grown in more favoured parts.

The Canadian prairies are one of the world's greatest granaries The dark soil of the region and a warm summer with long hours of sunshine provide the most favourable conditions for the cultivation of spring wheat. Oats and barley become important in areas which are not warm enough for wheat. Sugar-beet, rye and flax are also grown in considerable quantities. Dairying is carried on, especially in the damper eastern parts.

The prairies are rich in oil and coal, especially along the eastern flanks of the Rockies in Alberta. Winnipeg, the capital city of Manitoba, is the principal centre of the prairies.

The Western Cordilleras and the Pacific Coast: This region consists of the province of British Columbia and the Yukon Territory. It is dominated by high mountains, with many peaks over 3,000 metres above sea level. The coast is very much broken and its mountainous islands and peninsulas are separated by deep fiords and straits. Vancouver and Queen Charlotte are the two largest off-shore islands. It is largely uninhabited on account of its rigorous climate. CU

The region, in fact, presents great climatic contrasts. As it lies in the belt of the westerlies, the western slopes of the mountains receive a great deal of rain. The sheltered valleys and plateaus in rain-shadow areas are very dry. The climate of the coast is mild because of the influence of the North Pacific Drift or Alaska Current.

The coastal areas and the mountain slopes of the interior are heavily forested. The forests consist of coniferous trees such as the Douglas fir, white pine and red cedar. Lumbering is an important industry.

The region is rich in minerals. Copper, silver, lead, zinc and gold are mined in British Columbia.

Fishing is a well-established industry in the coastal areas. Part of the catch is from the deep sea; but coastal fishing is more important. This is because the salmon, a variety of fish, has the habit of coming in enormous numbers to spawn in the fresh waters of rivers. Prince Rupert is a great centre of salmon and halibut fishing.

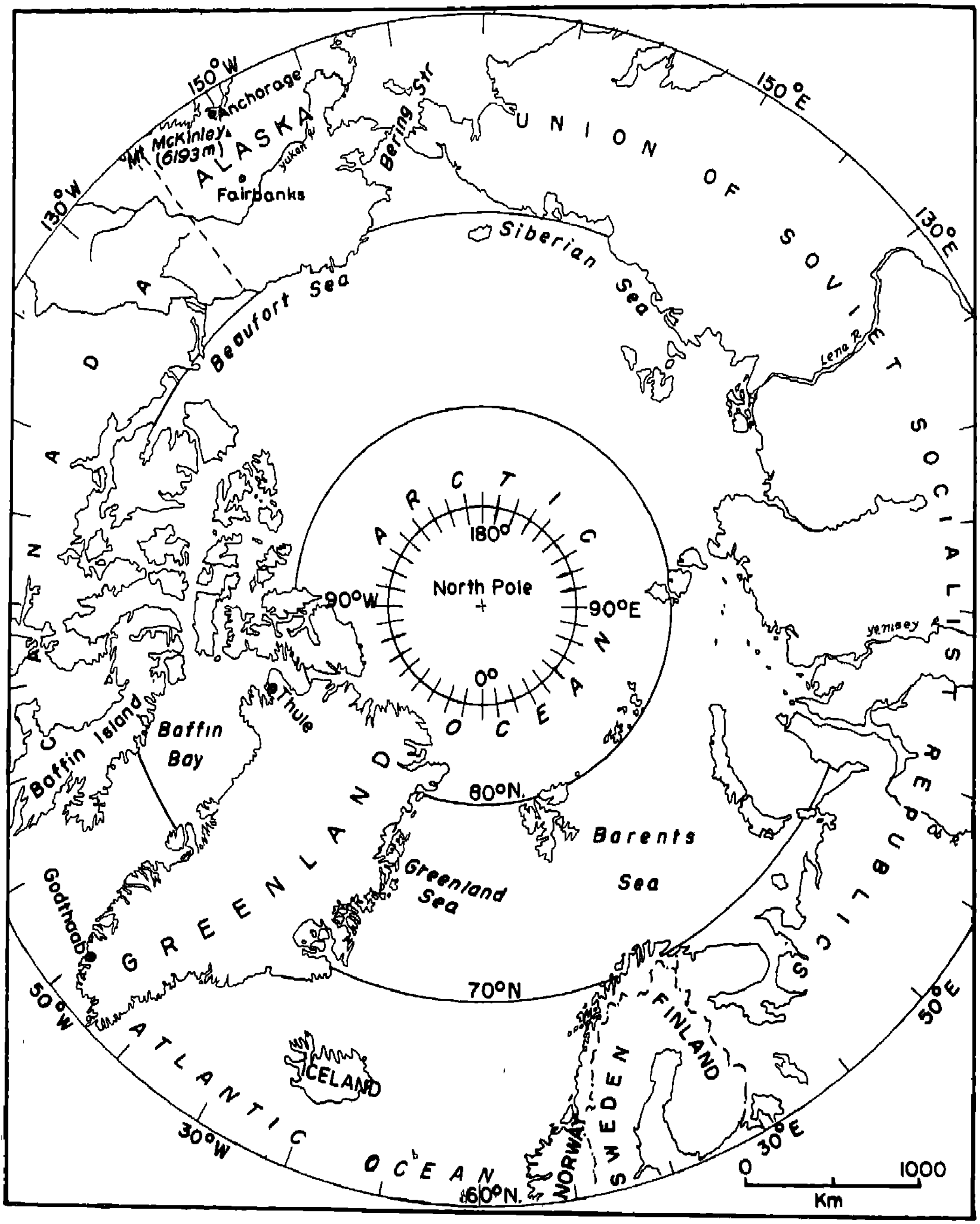


Fig. 18. Greenland

Note the location and latitudinal extent of Greenland, the largest island in the world. With a population of bare 37,000 people it has now gained in strategic importance. Why ?

The economic centre of the whole region is the island of Vancouver and the lower Fraser Valley. It is an important agricultural region of British Columbia and is famous for its fruit orchards. Two of the biggest cities of western Canada are Vancouver and Victoria.

The Rockies form a great barrier but they are crossed by railways, starting from Vancouver and Prince Rupert. The Yukon Territory in the north has poor transport facilities.

The Arctic Archipelago: Structurally, the region is a continuation of the Canadian Shield, although its topography is highly irregular. Extensive areas are covered with ice-caps and snow-fields. The region has a polar climate and the vegetation is of typical tundra type. The whole area is very sparsely populated as only a few thousand Eskimos inhabit this area. Seal hunting is the major source of livelihood in this inhospitable land.

GREENLAND

With an area of over two million square kilometres Greenland is the largest island of the world. This colony of Denmark is nearly five times as large as the State of Madhya Pradesh in India. In 1964, its total population was estimated to be just 37,000 people.

The island measures over 2,600 kilometres in the north-south direction and is about half as wide from west to east. Lying beyond the 60°N latitude, about five-sixths of its area is under an ice-cap which at places is 3,000 metres deep. The ice-cap rests on a bedrock which is depressed almost below sea level in the centre and is elevated at the edges.

Most of the population is confined to the western narrow coastal strip which is free from ice.

Greenland has a polar climate. The most northerly Eskimo settlement on 76°N has the mean temperature of about −10°C, with the polar night lasting for four months. Precipitation occurs only in the form of snow mainly in autumn Most of Greenland is covered with fog in summer.

Musk ox, reindeer, foxes, hares and occasional wolves roam over wild and lonely northern wastelands. Today there are 15,000 to 20,000 sheep on the island.

Besides the local Eskimos some Danish people have settled in Greenland. Many Greenlanders today are of mixed blood. All the Greenlanders enjoy full Danish citizenship.

Besides the traditional hunting and trapping, the significant economic activities of the people are sheep grazing, seal hunting, cod-fishing and vegetable farming. Vegetables, potatoes and hay can be grown in the open, during the long sunny days of summer. Foreign investment of naval, air and military bases is primarily responsible for the economic boom in this inhospitable land.

Now modern houses, motorboats and automatic weapons are not uncommon. At Thule which is situated on 76°N latitude, an all-weather air base has been established. It speaks of the growing strategic importance of this island

ALASKA

Occupying the north-western part of the North American continent, Alaska has today become perhaps the most important military outpost of the United States. Only a hundred years ago it was a Russian territory and was sold to the United States at the rate of less than 5 cents a hectare. In 1959, Alaska became the 49th State of the United States of America.

By the great-circle route, Fairbanks, a centrally situated town in Alaska, is closer to Moscow than to Chicago.

Alaska is situated for its most part in the northern latitudes of 60° and 70°. It is a little over two-thirds of Greenland in total area, or equal to the Scandinavian countries.

Alaska is mostly a mountainous country with a few flat and marshy plains and river valleys. McKinley, the highest mountain peak of North

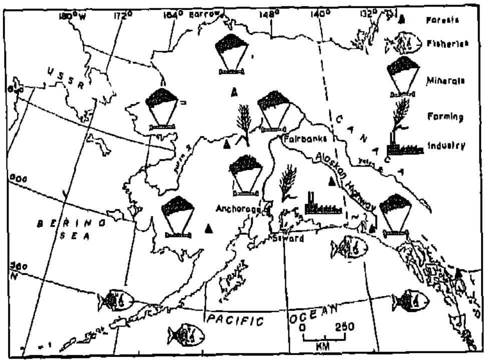


Fig. 19. Alaska

Compare location and size of Alaska with Scandinavia Why is Alaska called the most important military outpost of the United States ?

America, lies in Alaska. The high Alaskan Plateau is bordered by the Brooks Range in the north and the Alaskan Range in the south which extends south-westwards as the Aleutian Range. It extends towards the Kamchatka Peninsula of East Siberia.

Varied are the climates of Alaska. The southern coast of Alaska has a marine climate with cool summers and surprisingly mild winters for its latitudes. Precipitation is heavy. Central Alaska has a somewhat continental climate with cold winters and relatively warm summers. The northern Arctic coast has a polar climate.

The major economic activities of Alaska are fishing, fur trading, lumbering and mining. Salmon fishing and canning are the most important activities along the southern coast. Alaska possesses deposits of coal, oil, gold and a few other minerals, some of which are now being exploited. It has a very huge water-power potential. Saw-mills as well as pulp and paper mills are established along the southern coast. Agriculture on a modest scale is now practised in sheltered valleys.

The current economic boom in Alaska is essentially due to the large military expenditure in this region. Anchorage is the capital city of Alaska and Fairbanks an important transport centre of the interior. This largest State of the United States has the smallest population of only 230,000 which is, however, rapidly increasing. The population consists of the white people, American Indians, Eskimos and Aleutians.

EXERCISES

Review Questions

1. Answer the following questions briefly:
   (*i*) What rank does Canada hold among the countries of the world in respect of its size ?
   (*ii*) Name two minerals in which Canada leads the world.
   (*iii*) How large is the coniferous forest land of Canada ?
   (*iv*) Why is Canada able to export large amount of wheat ?
2. Give reasons:
   (*i*) The climate of Canada is colder than that of Europe.
   (*ii*) Only 4% of the land has been brought under the plough in Canada.
   (*iii*) Canada possesses half the fresh water on the earth.
   (*iv*) Settlements in the Canadian prairie followed the railway lines.
   (*v*) Alaska and Greenland in recent years have gained in strategic importance.

3. Complete the following statement with a correct ending:
   The prairies receive less rain and snow because
   (*a*) they are a flat lowland away from the sea
   (*b*) they are a treeless grassland.
   (*c*) they lie in the high pressure belt.
   (*d*) they lie on the leeward side of the Rockies.
4. Explain the part played by the Canadian Shield in the national economy of Canada.
5. How and why is the St. Lawrence lowland the most important region of Canada ?
6. Give an account of transport system in Canada pointing out the relative importance of various means of transport.
7. The effective use of natural resources ultimately depends upon the capital and technology available to man. Comment upon this statement by quoting examples from Canada.

Finding Out

8. Collect information about the life of the Eskimoes in the tundra, the trappers of the taiga and the lumber-jacks and miners in far off lands of Canada.

Cartographic Work

9. On a big outline map of Canada show the various ways in which the land and water are being used by the Canadian people. You can make it a pictorial map either by drawing or pasting suitable pictures This can be a class activity.

Picture Reading

10. Study the pictures No. 2, 3 and 5 and compare and contrast them with one another in respect of terrain, natural vegetation, climate and the land use they represent.

Films Available

(*i*) Physical Regions of Canada. 23 mins; English/Hindi; C.H.C.
(*ii*) Canada Land Form Regions. 15 mins; English, C.H.C.
(*iii*) Prairie Provinces of Canada. No. 917.1; 11 mins; English; D.T.A.
(*iv*) The Great Lakes-St. Lawrence Lowlands. 23 mins; English; C.H.C.
(*v*) The Precambrian Shield. 25 mins; English; C.H.C.
(*vi*) Pulp and Paper from Canada. 22 mins; English; C.H C.
(*vii*) Canadian Wheat. 31 mins; English; C.H.C
(*viii*) Industrial Provinces of Canada. No. 917.1; 11 mins; English, D.T.A.
(*ix*) Alaska, The 49th State. 23 mins; English; U.S.I.S.
(*x*) Greenland. No. 24; 17 mins; English; R D.E.

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CHAPTER 3

The United States of America

The twin continents of America comprise more than two dozen nations, the United States of America being one of them. Nonetheless, this single nation has the distinction of being referred to as America; and its citizens as Americans, obviously because it is the most dominant among them.

With an area of about 9·4 million square kilometres, it is the second largest country of the Western Hemisphere and the fourth in the world. Occupying about a third of the North American continent, it lies in its central and the most favoured part.

Before the advent of the European settlers, the local inhabitants, namely the Red Indians, lived mostly by hunting animals. Some of the American Indians raised corn and potato and knew how to weave cloth. But the resources of this land began to be unlocked with the landing of the Pilgrim Fathers in A.D. 1620. Although very few in numbers, they had an indomitable will and an urge to be free and self-dependent. The American pioneers cherished freedom of worship and were desirous of owning the land they tilled.

During the last three centuries and a half, this virgin land has been completely transformed by the new settlers. One fifth of the total land area has been brought under permanent crops. The cereal crops of the Old World, namely, wheat, rye, oats, barley, rice and sorghums have been introduced. Commercial crops like cotton, sugar-beet and sugar-cane are also grown. Similarly cattle, pigs, horses and sheep have been introduced and bred in considerably large numbers A little over quarter of the land area today is under permanent meadows and pastures.

The country is, indeed, endowed with rich, extensive farmlands and favoured with good climatic conditions. It possesses great reserves of commercial forests and pastures. Equally abundant are its mineral and power resources. Above all, its people have made great progress in science, technology and farm management. As a result of these favourable factors, both natural and cultural, America today is a prosperous agricultural land and an industrial giant of the world.

This land, "richer than any", is the wealthiest nation of our times. It has the highest standarp of living although there are some poor people and a few pockets of poverty in the midst of plenty.

The United States of America is a democratic republic that broke away from the British Empire in A.D. 1776 after the Declaration of Independence. Since then, in less than two hundred years, its population has increased from a bare 3 million people to over 194 millions today. It is a multi-racial and multi-religious society unified by a common bond of language, namely English.

The rapid and successful development of the vast resources of this land is attributed by the American people to their own skills and the social, political and economic institutions which they brought with them from across the Atlantic. They encouraged the development of an open society, democratic government and free economy based on competition.

American people are known for their adventurous spirit and business acumen. They struggled constantly to push their frontiers westwards from the Atlantic to the Pacific. Of late, they are actively engaged in the exploration of the outer space.

Location and Extent

The United States of America till recently consisted of a contiguous area comprising forty-eight States. With the addition of the two new States of Alaska and Hawaii, the number has now risen to fifty. The two new States are essentially the detached military outposts of the country.

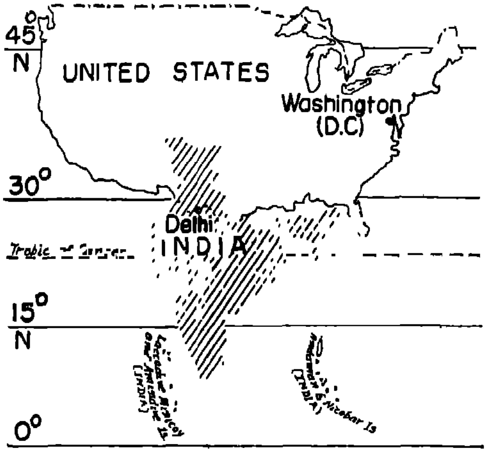

Fig. 20. Location and Extent of the Mainlands of the United States and India

Note the relative locations and the latitudinal extent of the mainlands of the United States of America and India. How do these countries compare with each other in respect of climate and agriculture as a result of their location and size ?

Alaska, lying beyond Canada, occupies the north-western portion of the North American continent. The State of Hawaii is a group of islands lying in the central North Pacific Ocean, half-way between Asia and America. It thus occupies a strategic position in the Pacific Ocean.

The country, excluding the two detached outposts of Alaska and Hawaii, extends between 25°N and 49°N. It extends east to west for about 4,800 kilometres and north to south about half this distance. An express railway train running from New York to San Francisco takes five days and has to cross four time zones. The total area of the country is a little less than that of Canada and slightly more than thrice that of India.

Relief and Drainage

The relief of the country is largely determined by the mountain ranges traversing the country from north to south.

Along the Atlantic seaboard the coastal plain rises gradually from the shoreline. Narrow in the north, **the Atlantic Coastal Plain** slowly widens to about 300 kilometres before it merges with a wider coastal plain along the Gulf of Mexico.

To the west of the Atlantic Coastal Plain lie **the Appalachian Highlands.** The mountain ridges running from north-east to south-west are interspersed with longitudinal valleys. The Catskill, the Allegheny, the Appalachian and Blue Ridge form the central core of this highland, flanked by plateaus on either side. These old, folded mountains rise rarely above 1,000 metres. These highly eroded mountains are marked by rounded hills and are forested to the top.

The eastern flank of the mountains is formed by a piedmont plateau rising abruptly from the Atlantic Coastal Plain. Along the rocky edge of this plateau rivers tumble down to the coastal plain, forming falls and cascades. The maximum

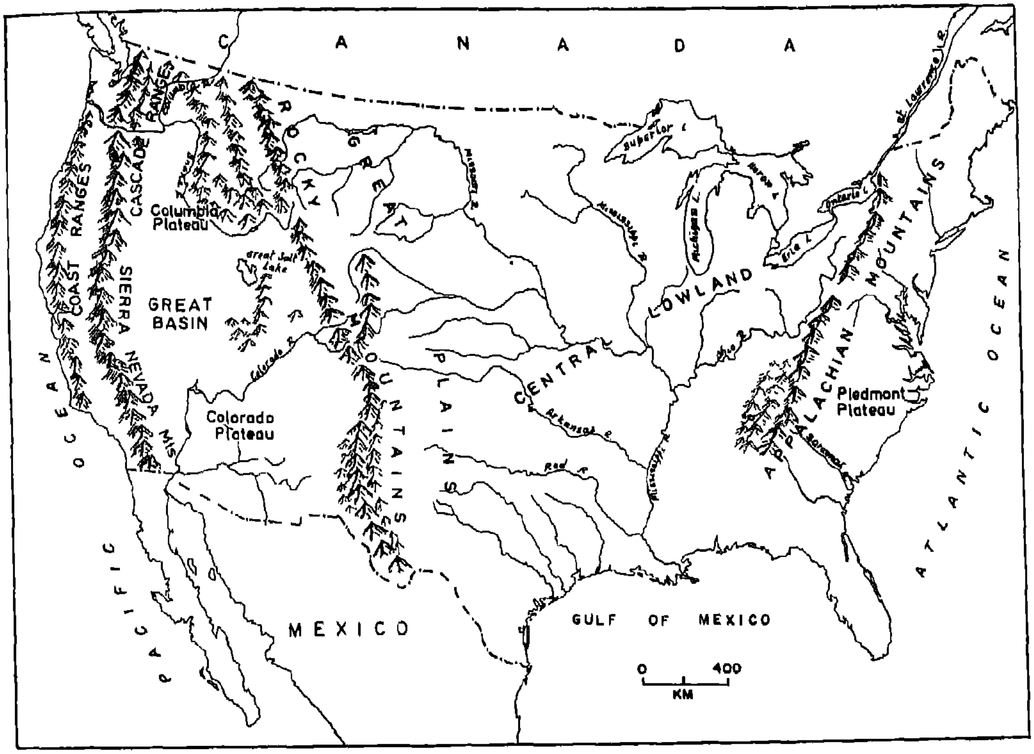

Fig. 21. The United States—Relief and Drainage (Adapted from O. W. Freeman and J. W. Morris)

Note the dominance of plains and mountains in the relief of the United States. How do these physical divisions compare with those of Canada ?

elevation of this "Fall Line" is about 130 metres above sea level. The prominent among the cities situated along the Fall Line are Trenton, Baltimore, Washington D.C. and Richmond. They are situated at the head of the navigable creeks and possess suitable natural sites for the generation of water-power.

Between the Appalachians on the east and the Rockies to the west lies **the Great Interior Plain.** It is bounded by the Great Lakes and the Canadian Shield in the north and merges with the Canadian prairies in the north-west. In the south it merges with the coastal plain along the Gulf of Mexico.

The Great Interior Plain is drained by the river Mississippi and a host of tributaries among which the Missouri and Ohio are the prominent. Flowing from north to south, it drains nearly two-thirds of the continental United States. The Mississippi in its lower reaches flows through a wide flood plain, occasionally shifting its course. The river, when in spate, overflows its banks causing great havoc and destruction. It has been constantly busy extending its delta into the Gulf of Mexico.

The region is subdivided into the fertile Central Lowlands and the Great Plains. The former extends between the Appalachians on the east to a line lying about 500 kilometres west of the Mississippi. To the west of this line, the Great Plains rise gradually from about 500 metres above sea level in the east to about 1,600 metres at their western extremity, the foot of the Rockies.

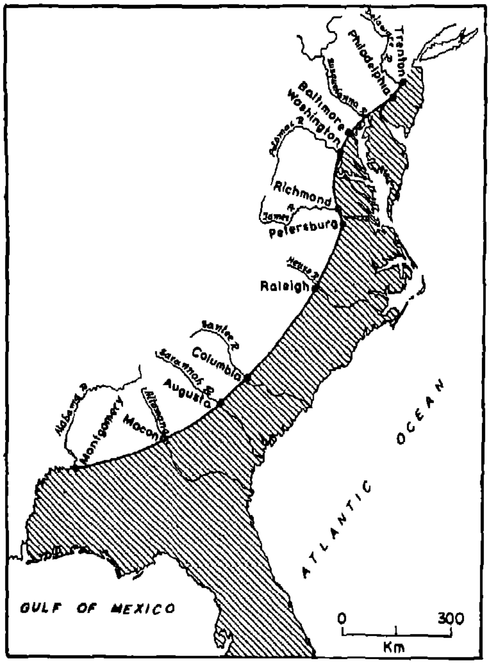

Fig. 22. The Fall Line of the Eastern United States

Note the towns situated along the Fall Line. How are these towns benefited from their location ? In what respect do the towns of Washington, Baltimore and Philadelphia differ from the rest and to what effect ?

The watershed between the Atlantic and the Pacific runs along the crest of the Rocky Mountains. These mountains form the easternmost flank of the Western Cordilleras To the west of the Rockies lie the great intermontane plateaus of Columbia and Colorado together with the Great Basin of inland drainage.

The Columbia Plateau, covered by lava flows, is cut by the deep [illegible] out by the rivers Colu [illegible] rivers flow north-westward into the Pacific. The Colorado Plateau is also cut by deep gorges formed by the River Colorado, the Grand Canyon being well-known for its rugged beauty. The river flows south-west into the Gulf of California.

The Great Basin is both traversed and surrounded by a series of high ridges and is the most arid part of the country. It is a region of inland drainage.

The western flank of the Western Cordilleras is formed by the north-south mountains—the Coast Ranges, the Cascade Mountains and the Sierra Nevada. The Great Valley of California separates the Coast Range from the Sierra Nevada. All these ranges of the Cordilleras are young and rugged. The highest peak of this mountainous region is Mt. Whitney, about 4,418 metres above sea level, whereas the lowest part in the Death Valley is 85 metres below sea level.

Climate

Because of its huge size and great variation in topography, the United States possesses varied climates.

Whereas the eastern half of the United States is humid and well watered, the western half with the exception of the north-western part is an arid land. The westerlies dominate the climate of the most part of the country. The cyclonic storms associated with these winds are mostly responsible for rain and snow. They are also the cause of wide variations in daily and seasonal temperatures.

The eastern half of the country receives adequate and rather assured rainfall of about 100 centimetres, the local variations being between 60 and 150 centimetres. The rainfall decreases from east to west and from south to north. The rainfall has a summer maximum and is largely due to humid air masses moving inland from the Gulf of Mexico In the whole region the mean temperatures generally decline northwards.

The eastern United States is divided into three climatic zones. The northern parts together with the Appalachian Highlands have a humid continental climate with short summers. In winter, snowfall is generally heavy. The region lying south of this belt has also humid continental climate with one difference, namely, the summers are fairly long. This fact has a great agricultural significance. The remaining region in the south is climatically much different from the regions of the north. It enjoys a humid sub-

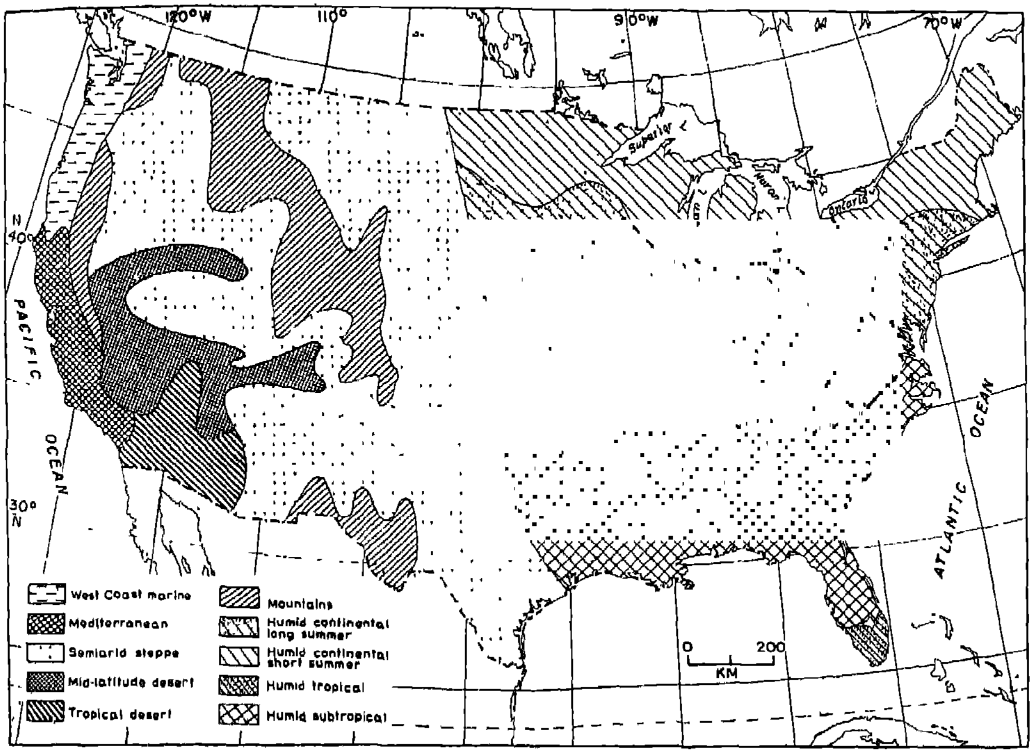

Fig. 23. The United States—The Climatic Types (After O. W. Freeman and J. W Morris)

Note that the climates of the eastern United States are characterized by humidity, whereas those of the west are mostly arid. Why is it that very few parts of the United States enjoy marine type of climates unlike Europe ?

tropical climate. Only a small area, particularly the southern tip of Florida, comes under the humid tropical type of climate.

Along the Pacific Coast, the northern half enjoys the west-coast marine type of climate, whereas the southern half comes under the typical Mediterranean type of climate. The southernmost part of California has a modified desert climate.

The Cascades, the Sierra Nevada and the Rockies have a mountain type of climate. The Great Basin and a part of the Colorado Plateau suffer from a desert type of climate. The rest of the region, including the western prairies and the Great Plains, has a semi-arid steppe type of climate where the rainfall is inadequate to grow crops. The western United States on the whole is an arid land, where rainfall generally decreases from north to south and from west to east.

Natural Vegetation

The humid eastern United States was essentially a forestland. Although much of it has now been cleared and brought under cultivation, it is still a major source of timber. The forests are a mixture of hardwood and softwood. The central hardwood forest stretches from Cape Cod in New England to Texas in the south and to Minnesota in the central north. It consists of species such as oak, hickory, ash, maple, whitewood and walnut (See Fig. 5.)

The southern forests along the Gulf Coast contain such species as pine, birch, gum, and hickory.

On account of their enormous size the redwoods and Douglas firs are the most spectacular forests of the United States. They lie along the northern half of the Pacific Coast. The giant cactus and candlewood of the south-west are also remarkable.

The central lowlands are covered with tall prairie-grasses, whereas the Great Interior Plain and the intermontane plateaus support short grasses often in patches. The intermontane deserts have a few varieties of desert shrubs.

Agriculture

The United States has brought 185 million hectares or 20 per cent of its land area under cultivation. Another 27 per cent is under permanent meadows and pastures and 32 per cent under forests. It is estimated that only 2 per cent of the potentially productive land is lying idle, the rest being wasteland.

The country commands an outstanding position in a number of agricultural products. In 1964, it led the world in the production of maize, soyabeans and oats. With the total output of 90 million tonnes of maize (corn) it accounted for two-fifths of the total world produce. Its share of 19 million tonnes of soyabeans was nearly three-fifths of the world supply. The country raised 28 per cent of world's oats. With over 35 million tonnes of wheat it produced one-eighth of the world produce, occupying the second position. It is the largest exporter of wheat, the staple food of the temperate lands. It is also the second largest producer of barley.

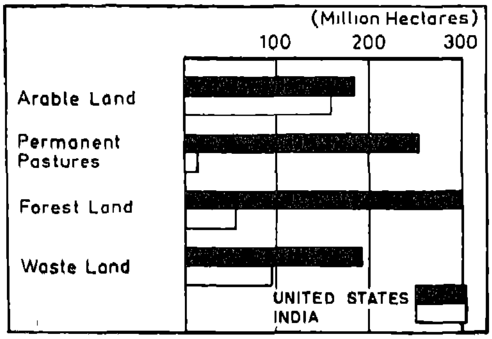

Fig. 24. Land Use Patterns of the United States and India

Note the cultivated areas of the two countries and work out their per capita implications Compare the positions of the two countries in respect of pastures and forests. What inferences will you draw about the pastoral industry and industries depending upon forest resources in the two countries ?

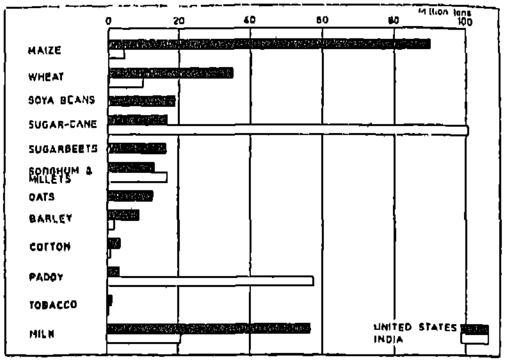

Fig. 25. Agricultural Produce of the United States and India (1964)

Note the dominating position of maize in American agriculture. Most of it is actually converted into meat. Name the agricultural products of both the United States and India in which they are far ahead of each other Are all the major Indian agricultural products represented in the diagram ?

In industrial crops, too, it is a leading producer of cotton, cottonseeds and tobacco. In all these commodities its production is nearly three times that of India. Its share of these products ranges between 23 and 28 per cent of the total world output. It ranks next only to Argentina in the production of linseed. It is also the second largest producer of sugar-beet, after the Soviet Union.

Till 1900, the agricultural commodities constituted the largest exports of the United States. Even today huge exports of these products are maintained, although the value of exports of manufactured goods is now several times more than that of the farm produce.

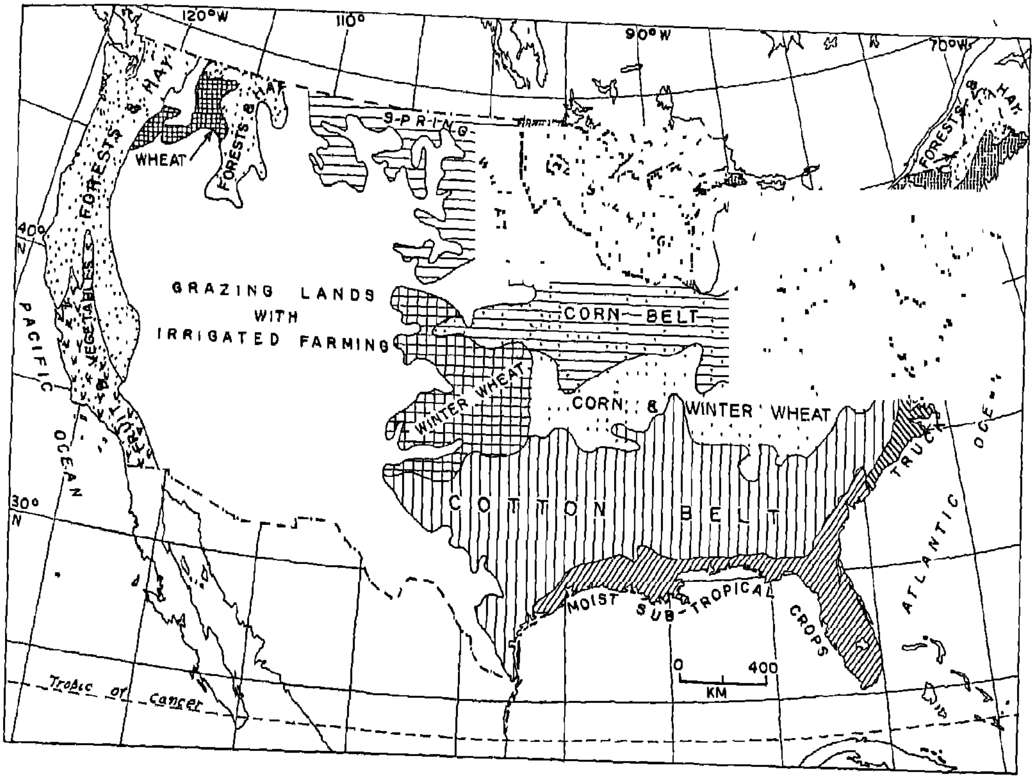

Fig. 26. The United States—Agricultural Belts (Adapted from W. W. Atwood and H. G. Thomas)

Note the succession of agricultural belts from north to south. Correlate these agricultural belts with the climatic zones of the country. To what extent are the locations of truck farming and dairying related to the density of population ?

Between 1930 and 1961, the total number of farms or landholdings, declined from 6·5 million to 3·8 million, increasing considerably thereby the average size of a holding. An average American farm is now about 120 hectares. In the Western United States it is as large as nearly 400 hectares.

What is perhaps most remarkable about the American agriculture is the very low percentage of its active population engaged in agriculture. The farm population which was 35 per cent in 1910 has now declined to a bare 9 per cent.

American agriculture has fairly high yields per hectare but it is even more notable for substantial production per head of labour engaged in farming. At the beginning of the twentieth century one farm worker was producing enough for seven non-farm persons; now he produces enough for more than twenty-five This has helped to augment the supply of huge labour that was badly needed for the rapid and enormous industrial development of the country.

The favourable factors for the rapid growth of agriculture in the country are very large level lands, assured and adequate rainfall in most parts, and a fairly long growing season. The large holdings have necessitated the increasing use of farm machinery. Tractors, motor trucks, harvesters and combines, milking machines, and corn and cotton pickers are common on almost every farm During the years 1951 to 1961, almost all the mules and horses on the farm were replaced by tractors. This in turn released for other uses about 8 to 10 million hectares of land, formerly used for the production of fodder alone to feed these animals.

Besides machines, the use of fertilizers, chemicals and insecticides, introduction of improved varieties of seeds, easy availability of quick transport facilities and refrigeration have contributed to the development of agriculture on modern, commercial and scientific lines. The American farm houses possess all amenities of modern life such as radio, television, telephone, mail service and automobiles owned by the farmer.

With the total milk production of over 57 million tonnes, the country accounts for nearly a sixth of the world's output. Dairying is the dominant farm activity in the North-eastern United States. Minnesota and Wisconsin are the most important dairy regions. The huge metropolitan cities provide a never-failing market. Truck farming has now become common along the mid-Atlantic coast, where fruits, vegetables and tobacco are the leading products.

South of the dairying region lie the three important belts of concentrated crops in the eastern United States. From north to south, they are (*i*) a corn belt, (*ii*) corn and winter wheat belt and (*iii*) the cotton belt.

The corn belt lying to the south of the Lakes Erie and Michigan and extending towards the Rockies is the heart of agricultural United States. It is the region that is most important both for cereals and animal products.

To the south of this belt lies the corn and winter wheat belt, where tobacco and fruits are also grown. This transition zone is followed by the big cotton belt of the south. In addition to cotton, rice, sugar-cane, citrus fruits, groundnuts and tobacco are also grown in this belt.

The central part of the Great Plain is a winter wheat belt and the northern, the spring wheat belt. It covers the North and South Dakotas, Montana and the western fringe of Minnesota. It is a continuation of the Canadian Prairie wheat belt. These western prairies along the Canadian border have too cold winters to grow winter wheat.

The south-western part along the Pacific coast is the fruit orchard of the United States. Wheat is grown on the Columbia Plateau in the north-west, and the rest of the western United States is either under forests or occupied by deserts where only irrigation agriculture is practised.

Minerals and Power

The wealth of minerals and fuels forms the foundation of the industries of the United States. The country is rich in metallic minerals, iron, zinc, lead, copper, gold and silver. It leads the world in the production of copper and zinc In 1964, it was the second largest producer of iron-ore, next only to the Soviet Union and the third in lead after Australia and the Soviet Union.

The country possesses very rich and extensive iron reserves in the Lake Superior region. The Mesabi and Vermilion ranges have been the most important iron-fields Situated not far from the Lakes, which provide cheap inland water transport, these ranges were exploited first.

The annual production of iron-ore, however, is inadequate. Therefore, an increasing use of iron-ore imported from other countries, particularly Canada and Venezuela, is being made. In 1964, the production of indigenous iron-ore was only 48 million tonnes, as against about 80 million tonnes of pig-iron and 115 million tonnes of crude steel manufactured in the country.

Copper is mined in the Rockies, especially in the States of Arizona, Montana and New Mexico. Black Hills district of South Dakota has large gold mines. Gold and silver are also found in a few western States. The United States is rich in rock phosphates, an important ingredient of chemical fertilizers.

In terms of value, the leading minerals of the country are the fuels—crude petroleum, natural gas and coal The United States is very rich in coal, aptly described as its black gold. In 1964, it

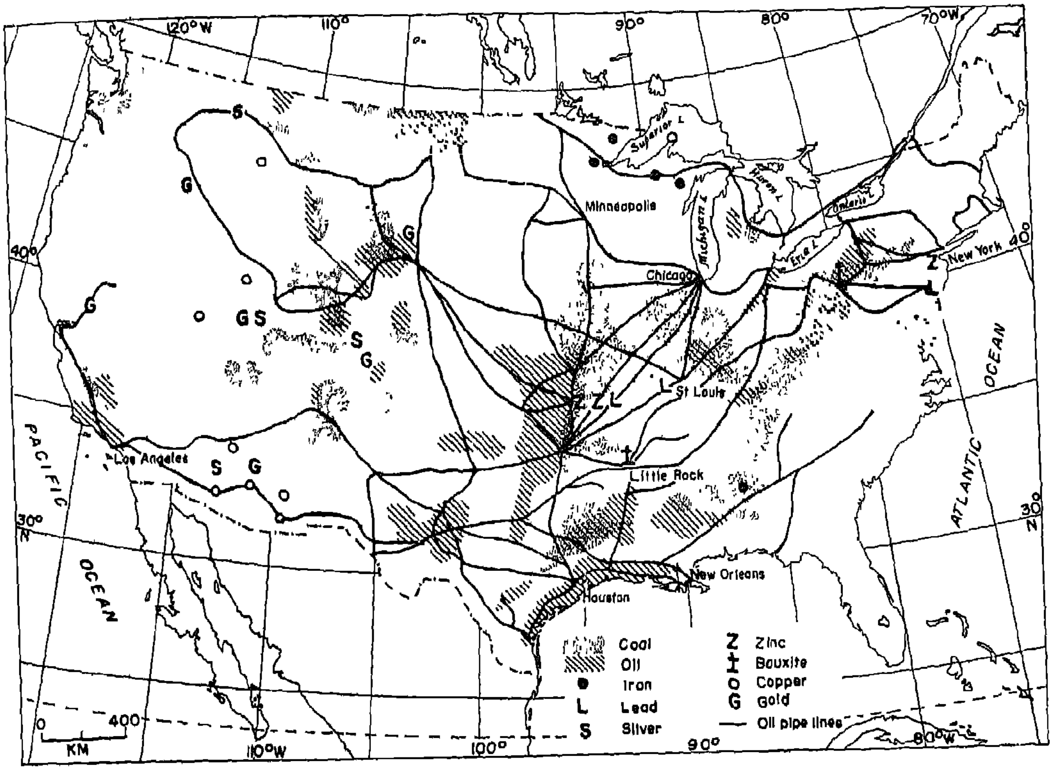

Fig. 27. The United States—Important Mineral Resources and the Flow of Petroleum

Note the location of coal, iron and mineral oil. What part do the Great Lakes play in the location of iron and steel plants ? How do oil pipelines affect distribution of industries ?

produced 455 million tonnes of coal, well over a fifth of the total world output. The important coal mining area is the Appalachian coal-field extending from Pennsylvania to Alabama. It accounts for nearly three-fourths of the national production.

In 1940, coal provided 48 per cent of the total energy produced in the country, but by 1960, the share of coal dropped down to just 26 per cent. Now crude oil and gas provide the maximum amount of energy. The share of oil has risen to over 35 per cent It is closely followed by natural gas which accounts for 33 per cent of the total energy produced in the country. The growing use of natural gas is a remarkable development in the marketing of fuel, as it is easily transported to far off places through pipelines.

In 1964, the country produced 440, 233 million cubic metres of natural gas and 376 million tonnes of crude petroleum. In both these commodities its production was much higher than that of any other country in the world. Texas, California, Louisiana and Oklahoma are the principal producers of gas and petroleum.

The United States has a huge installed capacity of electrical energy. It was 240 million kilowatts in 1964. Of this, only 42 million kw. was hydel-power. The latest addition to the sources of mineral power is atomic energy. The United States is the largest producer of uranium; and

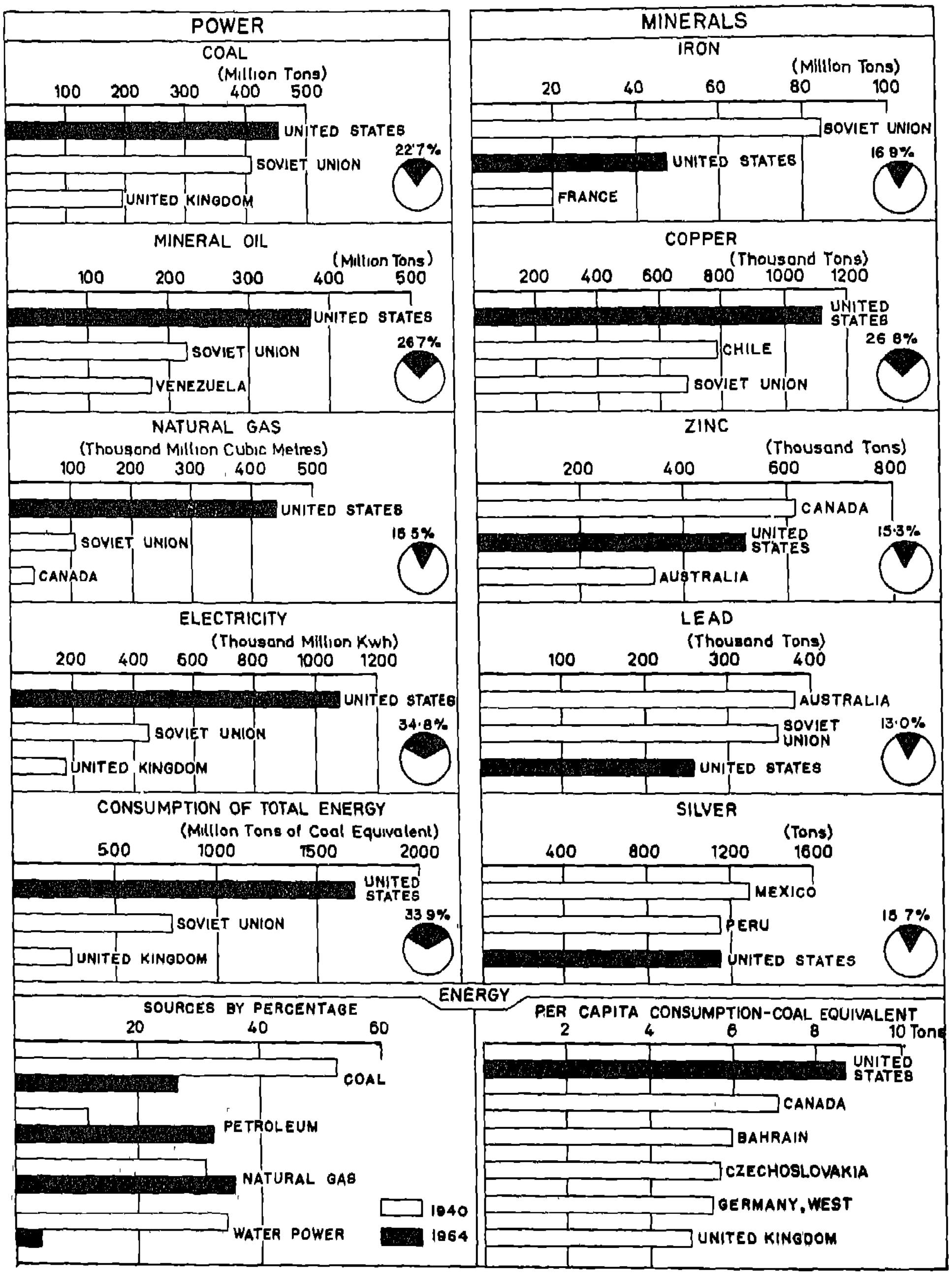

Fig. 28. Production of Power and Minerals in the United States and other Leading Countries (1964)

Note the dominating position of the United States in fuels, energy and metallic minerals To what extent are the mineral deposits of the country responsible for its enormous industrial growth ? What is the secret of high productivity of the labour in America ?

several atomic power plants have gone into production since 1958. Even some of the ships have now started using atomic energy.

Industries

Today, the United States is predominantly an industrial country, manufacturing being the greatest single source of its wealth. Over 30 per cent of its national income is derived from manufactures of various kinds. Nearly a third of its active population is engaged in industries.

Giant firms with huge capital resources dominate the industry. In 1961, fifteen companies earned more than 125 million dollars each. The largest profit earned by a single firm was to the tune of 900 million dollars. Keen competition among the firms has often led to phenomenal increase in production at competitive rates.

Growing efficiency and productivity of industrial labour are the most important factors responsible for the phenomenal growth of American industry. The cost of production is progressively brought down by introducing labour-saving machinery. Today with the help of more and more modern machines industrial labour is able to work more efficiently and with much greater speed. Computers, automatic controls and integrated machinery have brought in the new era of automation in industry. Some time back the production of an engine in the automobile industry required 40 minutes and 400 workers. The same was being achieved in 1961 in 18 minutes by only 48 workers.

The iron and steel industry is the basic and the foremost industry of the United States. With the total production of about 80 million tonnes of pig-iron and nearly 115 million tonnes of crude steel in the year 1964, it led the world in the production of iron and steel. It actually accounted for a quarter of the total world production. The industry is concentrated mainly in the Appalachian region and in the Lake Districts.

Iron and steel in turn sustain heavy transport industries. The United States produced 7·7 million passenger cars and 1·54 million commercial vehicles. Thus in the year 1964, it accounted for nearly 45 per cent of the world production of cars and 31 per cent of the total commercial vehicles The country also produces rolling stock and builds naval and merchant ships.

The country specializes in the production of various kinds of machines and tools. Agricultural machinery, durable consumer goods like refrigerators and a variety of electrical and electronic goods are some of the prosperous industries of the United States.

The United States is a leading producer of smelted and refined copper, zinc, lead, and aluminium. Its production of aluminium was 2·3 million tonnes in 1964. The bulk of it is used in the production of aeroplanes.

The country is an important producer of woven cotton fabrics. It produced over 8,200 million metres of cotton fabrics in 1964. It follows Japan in the production of rayon and acetate fabrics. Besides textiles, the country has a very large food processing industry based on agricultural produce Meat, dairy products, poultry, canned fruits and sugar are some of the important commercial food products. It also leads in tobacco products.

The country is a leading producer of lumber, paper and wood-pulp. Its production in these commodities ranges between 20 and 40 per cent of the world's output.

The other important industries are chemical, petro-chemical, cement and synthetic rubber.

The North-East United States is the biggest manufacturing region where half the total population of the nation is concentrated.

Transport and Communication

The United States being a land of distances, transport is a problem of great magnitude. Almost all types of modern means of transport function side by side competing with one another.

The country has a close network of roads especially in its north-eastern part. Its metalled roads are well over 3 million kilometres. The

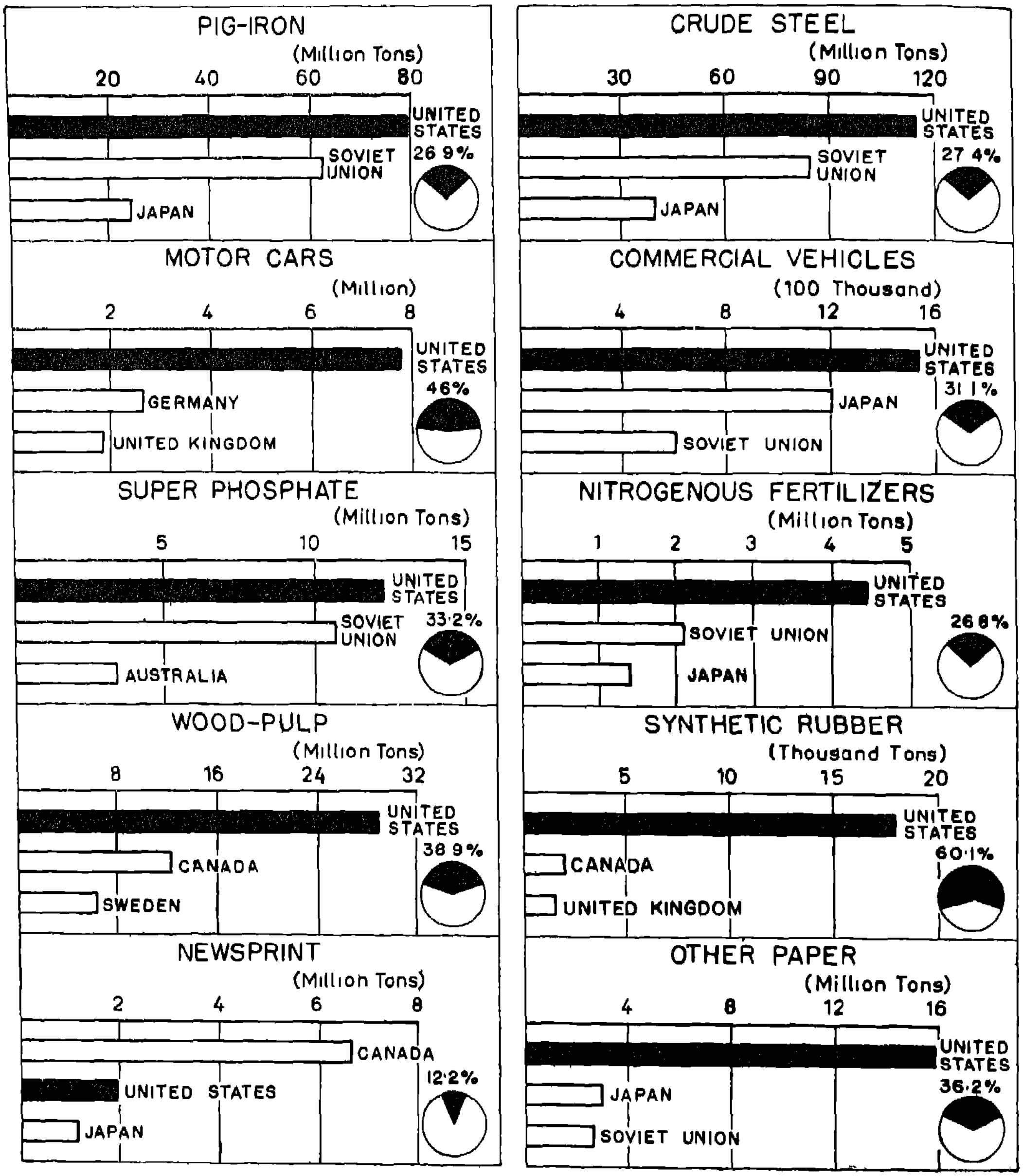

Fig. 29. Industrial Production of the United States and other Leading Countries (1964)

Note the importance of iron and steel in the various industries of the United States. Why is the transport industry very important in this country ? Which industries depend on the forests ?

urban centres are connected with spacious freeways where five or six rows of vehicles can move abreast in one direction very fast and uninterruptedly. The country had over 71 million cars, nearly 56 per cent of world's total in the year 1964. The number of commercial vehicles was over 12 million. It is estimated that about 90 per cent of the inter-city passenger traffic is now carried by private motor cars.

The railways in the United States are most important for carrying freight. They carried over 960 thousand million net ton-kilometres in 1964. Their importance as carriers of passengers is fast declining because they face keen competition from motor cars, long distance buses and airlines. New York, Chicago, St Louis, New Orleans and Los Angeles are the important railway junctions in the country.

The Great Lakes serve very well the industrial United States. With the opening of the St. Lawrence Seaway, the importance of Duluth, Chicago and Detroit as ports has increased considerably. The Mississippi is also used for inland navigation. Coastal shipping is important, especially along the Atlantic seaboard. The bulky commodities such as coal, iron-ore, lumber, cereals, generally form the waterborne freight. The ports of New York, San Francisco and New Orleans are the major gateways for its international commerce. The merchant shipping of the United States in 1964 was over 24 million tonnes, the largest in the world.

The pipelines for carrying petroleum and gas are now increasingly used. They accounted for nearly a sixth of the total freight carried by all means of transport in the country. Air travel is becoming more and more popular.

The telegraph, telephone, radio, television, surface mail and air mail are the principal means of communication. All of them except the postal services are owned by private undertakings. In 1962, there were 75 million telephone sets in operation carrying about 300 million calls a day.

Population

The total population of the United States had reached 193 million in 1964. This gives the average density of about 20 persons per square kilometre. The population is, however, very unevenly distributed over the country. The eastern half of the country accounts for nearly three-fourths of its total population; and the north-eastern quarter of the country contains nearly half the national population.

The rural farm population is very small. The metropolitan areas alone accounted for 72 per cent of the total population. Another 25 million people were living in urban settlements outside the metropolitan area. The proportion of people living in suburbs has been increasing very fast after World War II. This is an indication of the growing prosperity of the people who prefer to live in small houses of their own in the open uncongested areas and to travel daily to the city for work, in their own automobiles. The country has 130 cities with a population of 100,000 each. There were five cities with a population of over a million people. The largest concentration was in the city of New York which claimed over 8 million people.

The American Indians were about half a million in the year 1960. There are special areas reserved for them, known as Indian Reservations Some Indians are gradually mixing with the American population and adopting the new way of life.

The American Negroes form about a tenth of the total population of the country They are the descendants of the slaves who were brought into the United States in the earlier years to meet the shortage of labour. They particularly did well on cotton farms of the south. The American Civil War was fought on the issue of slavery in which the liberals of the North achieved a military victory. The Federal Constitution of the United States guarantees full freedom for all, irrespective of race or colour However, there is discrimination against the Negroes particularly in the South.

The Negroes supported by a large number of white people are now pressing hard for their full civil rights. It is a big social and human problem which has been engaging the attention of not only the American people but of the whole world. The Federal Government has recently taken several steps to restore to these people the civil rights guaranteed under the Constitution. It must be remembered that they know and speak only the English language Most of them are Christians and have adopted the American way of life as their own They do not have any other land except the United States of America as their homeland A large proportion of them is of mixed blood.

Today, although the Negroes are concentrated in the South, a very large proportion of them has moved into the metropolitan areas of the north and the west. For example, Washington D.C., the capital city of the United States, has a Negro majority. The Negroes in Chicago and New York form a very big proportion of their total population.

The European immigrants and their descendants constitute the bulk of the total American population They comprise all the European nationalities It is interesting to note that generally the second generation of new immigrants from Europe, other than that from England, forgets its original language and adopts English as its only tongue.

EXERCISES

Review Questions

1. Answer the following questions briefly:
   (*i*) Name the physical divisions into which the United States is generally divided.
   (*ii*) Which half of the United States is well watered and why ?
   (*iii*) What makes the United States to be the world's largest producer, importer and consumer of wood-pulp ?
   (*iv*) Name the five agricultural crops in which the United States leads the world.
   (*v*) In what cereal is it the world's largest exporter ?
   (*vi*) Which are the two minerals in which it has the highest production in the world ?
   (*vii*) What is the secret of high productivity of labour, both agricultural and industrial in America ?
2 Elaborate the following statements with your own comments:
   (*i*) During the last three centuries and a half this virgin land has been completely transformed by new settlers.
   (*ii*) Alaska and Hawaii are essentially the two military outposts of the United States.
   (*iii*) The rapid and successful development of the vast resources of their land is attributed by the American people to their own skills and the social, political and economic institutions which they brought with them from across the Atlantic.

3. Complete the following statement with a suitable ending:
   In recent years the agricultural production in the United States has considerably increased because the country
   - (*a*) has been in a strong position to bring every year virgin lands under the plough on a very large scale
   - (*b*) has been able to better equip its agricultural labour with better machines and techniques of farm management.
   - (*c*) has taken to intensive agriculture by pressing a large proportion of its labour force into agriculture.
   - (*d*) has been concentrating on agriculture, giving only a second place to its industries.
4. State the salient features of American agriculture highlighting the differences between the agricultural practices of India and those of the United States.
5. Describe the development of power resources of America indicating their relative importance today To what extent do you think that the secret of the high standard of living of American people lies in the developed power resources of the country?
6. Write in brief an account on the iron and steel industry of the United States and its relationship with its transport industries.

Finding Out

7. Collect information on what is automation and how it has brought about a revolution in American life and economy. Report your findings to your class.

Cartographic Work

8. In an outline map show the agricultural belts of the United States Make it a pictorial map, if you so choose.

Picture Reading

9. Study carefully pictures No. 6,17 and 18 and write a brief note on the importance of roads, railways and waterways for the growth of industries in the United States.

Films Available

(*i*) Geography of the United States. 13 mins; English; U.S.I S.
(*ii*) Agriculture in U.S.A. 30 mins; English/Hindi/etc; U.S.I.S.
(*iii*) Valley of the Tennessee 30 mins; English/Hindi/etc.; U S I.S.
(*iv*) American Cowboy. 30 mins; English; U.S.I.S.
(*v*) Forests and Conservation. No. 634.9; 11 mins; English; D T.A.
(*vi*) Achievement in Steel. 40 mins; English; U S I.S.
(*vii*) Story of Copper. 30 mins; English; U.S.I.S
(*viii*) This is Automation. 30 mins; English; U.S.I.S.

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*Miller, G J., Parkins, A. E. and Hudgins, B., *Geography of North America* John Wiley and Sons, New York, 1954, Pp. 54-91.

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CHAPTER 4

The Regions of the United States

FROM east to west the geographical divisions of the United States are (*i*) the North-East, (*ii*) the South-East, (*iii*) the Mid-West or the Central Basin, (*iv*) the Great Plains, (*v*) the Rocky Mountains and the Western Plateaus, and (*vi*) the Pacific Coast.

The North-East

The North-East United States consists of New England region and the areas lying between the Great Lakes and the Atlantic coast. This region is today the most industrialized part of the United States. Being the first to be settled by the European immigrants, it still maintains its leadership in almost every walk of American life including its economy.

The region has a varied topography. Its highly indented coastline provides a string of natural harbours. The rocky coast is often backed by coastal lowlands favourable for settlements. In the interior are the highly glaciated valleys and ridges, especially in northern parts of New England. Beyond the Appalachians are the rolling plains sloping gradually towards the Great Lakes.

In rural areas the ridges are covered with pastures and flanked by orchards and vegetable gardens. The rolling land is generally occupied by dairy farms and is strewn with low cattle sheds, tall silos and barns.

On the other hand, the huge skyscrapers, dazzling office buildings, the steel mills and automobile assembly lines are the most contrasting features of the urban landscape.

Situated near the "fish-bowl" of the North-West Atlantic, the early settlements along the sea coast of New England were essentially fishing communities. Today, much of the sea-food of the United States comes from the fisheries off the New England coast as a result of its highly modernized fishing industry.

With its infertile and shallow soils, the region of northern and central New England supports only subsistence agriculture where potato is an important crop. The region which once produced grain has now switched on to dairy farming, because of the cool humid climate and an ever-increasing market in its metropolitan areas. The southern New England has specialized in vegetable gardening or truck farming industry.

The prominent industries in the urban centres of New England are cotton and woollen textiles, machinery, hardware and leather goods. Boston is the leading industrial centre and is perhaps more famous for its institutions of higher edu-

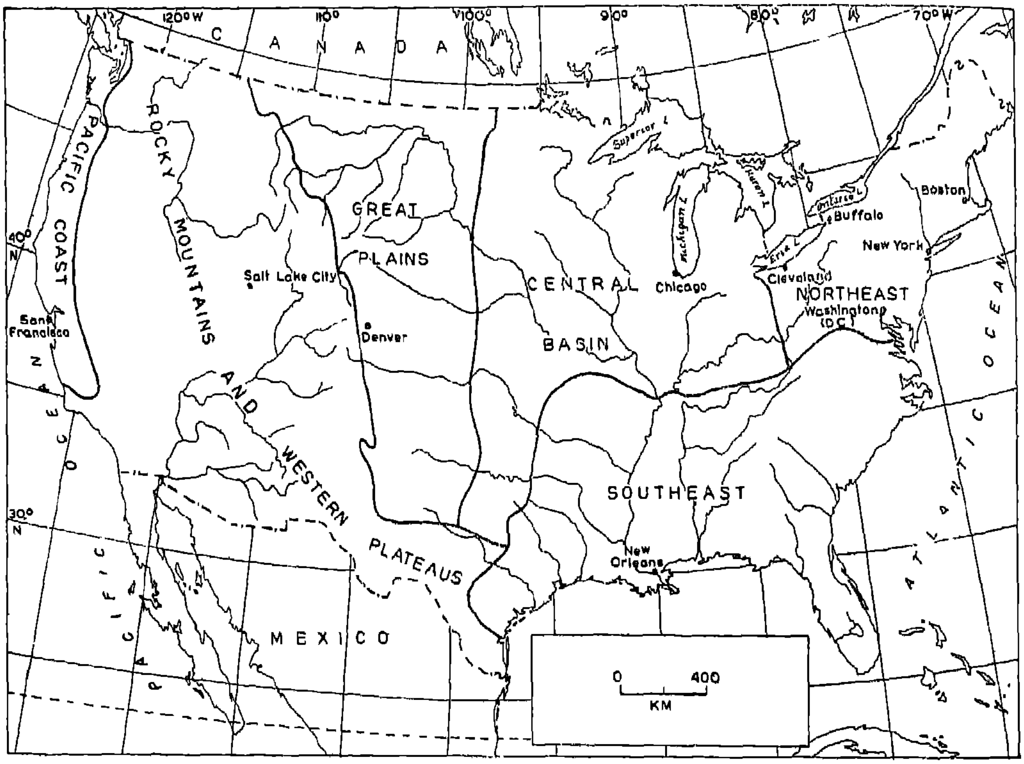


Fig. 30. The United States—Geographical Regions (Adapted from U.S.I.S.—U.S.A. —*Its Geography and Growth*)

Note the six different geographical regions of the United States. How do these regions differ from the physical divisions of the country ?

cation, for example, Harvard University and the Massachusetts Institute of Technology (M.I.T). Boston is one of the leading ports of the Atlantic seaboard.

Southern New England is the cradle of machine manufacturing. It has several "firsts" to its credit in the production of machines, development of new techniques and innovations in industry. Even when textile industry has a tendency to migrate to the south where raw material and cheap labour are in plenty, New England has held fast to its dominant position by specializing in high-grade products, utilizing highly skilled labour.

The region is maintaining its leadership through imported raw material, highly skilled local labour, and the resourcefulness and enterprise of its farmers, businessmen and industrial labour.

The spacious natural harbour is the basis of prosperity of the great metropolitan area of New York. With over 1,000 kilometres of water-front, it is the largest and the busiest port in the world. Over 10,000 vessels pass every year through it. Nearly 13 million people living within the radius of 40 kilometres from the Statue of Liberty make it the world's largest "conurbation"—a cluster of innumerable towns and suburbs surrounding the big metropolitan centre.

The port is connected with the Great Lakes in

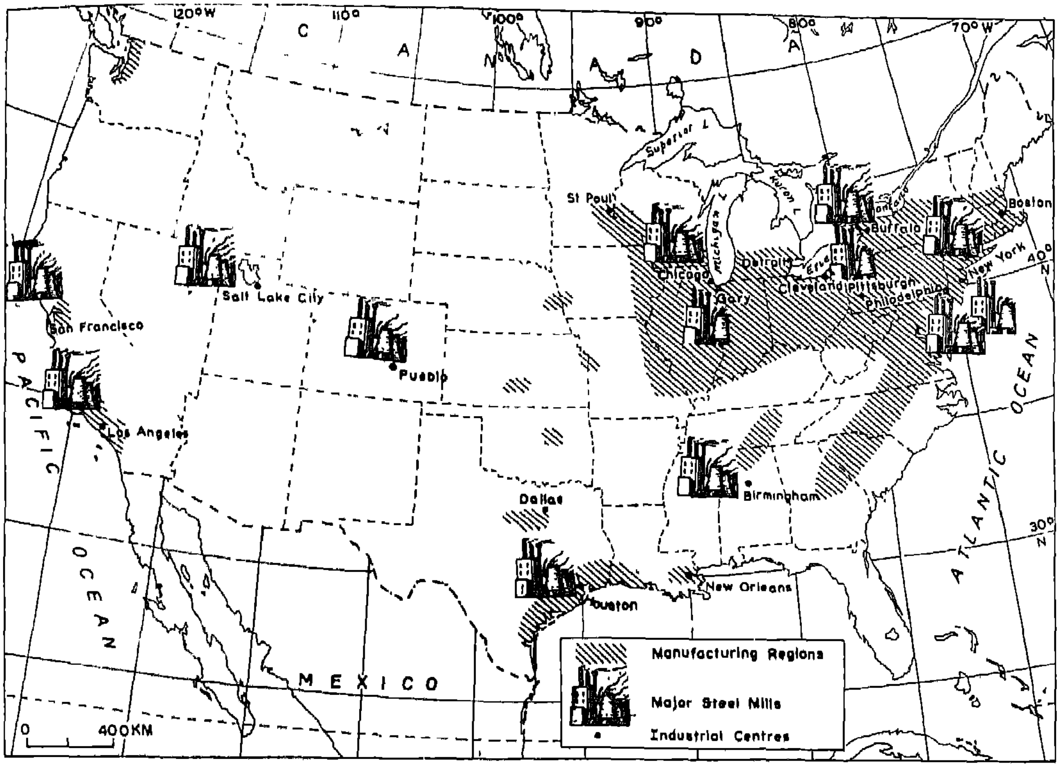
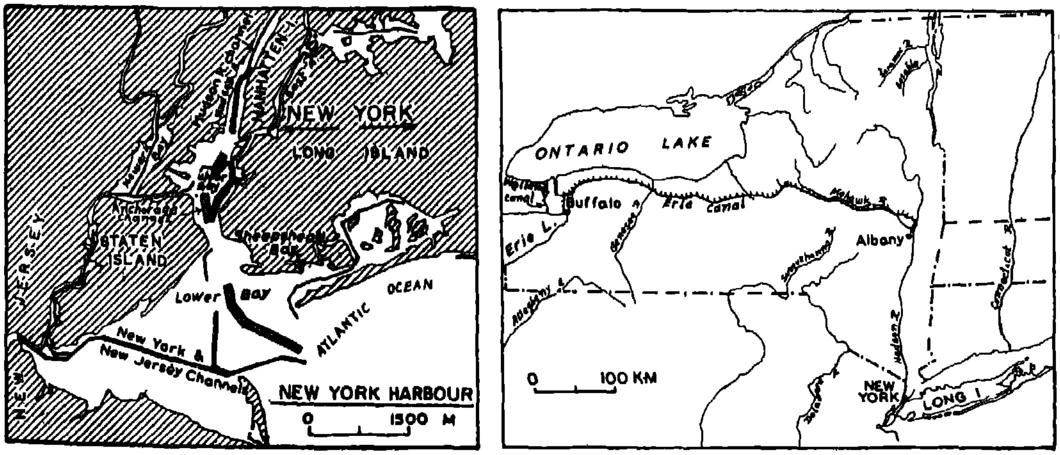


Fig. 31. The United States—Manufacturing Regions

Note the dominance of the North-East United States in manufacturing industries. What are the contributing factors for the high concentration of varied manufacturing industries in the region ?

Fig. 32. New York and Its Hinterland

Note the spacious natural harbour of New York. It makes New York the world's largest and the busiest port. What other natural factors have contributed towards its phenomenal growth ?



the north through the Hudson River and the Erie Canal. New York is the hub of commercial, financial and political activities of almost the entire world. Manhattan Island—the core of New York city—houses the headquarters of the United Nations. The skyscraper is a characteristic feature of this city; the largest being the Empire State Building which has 102 storeys. Rising about 412 metres above its base, it has been the highest man-made structure for a considerable time. The shortage of space has led to this astonishing vertical growth of the city.

New York is also the greatest transport centre of the country. It possesses the busiest international airport, named after the late President Kennedy. From the city several railway lines fan out to different parts of the country. It also possesses a local underground railway system by which hundreds of thousands of workers pour in and out of the city everyday. In addition, nearly 1·5 million automobiles dash to the city every morning creating the most difficult traffic and parking problems.

An almost continuous urban belt connects New York with Washington D.C. It boasts of several important ports and numerous industrial establishments. Many of the cities in this area owe their origin to the availability of natural harbours and water-power sites. Access to coalfields of the Appalachians in the west and the natural routes to the interior across the highlands have further contributed to their growth.

Washington D. C. is the federal capital of the United States. This well-laid-out city has many Government buildings and national monuments Prominent among them are the Capitol, the White House and the Washington Memorial.

In the north, the Hudson-Mohawk corridor is an important artery of transport. The Hudson actually flows through a rift valley that opens into New York harbour in the south. In the north the valley has a natural access to the Great Lakes through the Mohawk depression. It is another belt of urban settlements and industrial establishments. Buffalo and Niagara Falls stand at the western end of this belt. Buffalo has become an important industrial centre because of easy access to iron-ore, through the Great Lakes, and coal from Pennsylvania. It leads in flour-milling as it grinds Canadian wheat without charging any import duties.

In the south-west, the area around Pittsburgh is famous for mining, iron and steel plants and associated manufactures. It is a very important coal-mining region of the United States. In this region are produced coal, cement, chemicals, iron and steel, motor trucks, machines, silk and rayon fabrics. Pittsburgh is an important steel city and a coal collection and distribution centre, as it is situated at the confluence of the Monongahela and the Allegheny where they form Ohio This river port has the largest aluminium and glass plants and is the headquarters of oil companies. It also manufactures railway equipment

The South-East

This is a region of abundant rains, warm summers and a long growing season. Once a land of cotton plantations and corn (maize) fields, it is now a land of diversified farming. It is a region that has been changing very fast in almost all respects.

Today hay, groundnuts, soyabeans, fruits, vegetables, tobacco, rice, oats and sugar-cane are being grown in this subtropical land. Cattle for beef and dairying are also reared and hogs are fattened for their meat.

The South-East, also known as the South, is a region of varied topography—the coastal plains, the Appalachian Uplands, the lower Mississippi Valley and the margins of the Great Plains. More than half the South is still forested. It is a region of pines, cypress, red gum and mangroves.

Cotton is the first cash crop of the United States It is still the leading export crop of the country Till 1940, nearly three-fourths of the farmland of the south was under cotton. It is still the leading crop of this region although its primacy is now in dispute. It grows well on the alluvial prairie soils. Continuous cultivation of cotton exhausts the soils and demands constant application of fertilizers.

Tobacco, the second major cash crop, grows well on the northern border of the cotton-growing area.

Citrus and other fruits, vegetables, rice and sugar-cane are becoming increasingly important in Florida and the coastal plains along the Gulf of Mexico. Rice farming is completely mechanized. The region is also becoming important in animal rearing. In view of the local climatic conditions, special breeds have been developed by importing bulls from India. These cattle, bred with local strains, do well in high temperatures and excessive humidity. They are resistant to cattle ticks and pests.

Forestry and forest industries such as paper and pulp have now come into prominence in this region. Pine trees in these forests yield turpentine and resin—nearly two-thirds of the total world produce. The wood-pulp also now supports the synthetic fibre industry. Similarly, fishing is important in the Gulf of Mexico. Sponge fishing is also significant along the coast.

The South is not only an agricultural land but its mineral wealth is also varied and abundant. Being very rich in oil and natural gas, it leads in the production of these fuels. Texas, Oklahoma and Louisiana are the leading producers of oil and gas.

There are rich coal deposits in the southern Appalachian region. Coal is found also in Texas and Oklahoma. Iron-ore is mined in Alabama, bauxite in Arkansas, and phosphates in Florida and Tennessee. The well-known Tennessee Valley Authority, which served as a model for the multi-purpose river valley projects of India, provides hydro-electricity. Besides supplying water for irrigation, it assists in controlling floods and checking soil erosion.

The agricultural raw materials, namely cotton and tobacco, have attracted the cotton textile and tobacco industry to the South, rather recently. Availability of cheap labour and fuel are the other favourable factors.

Birmingham with its new iron and steel industry now rivals Pittsburgh. Oil, natural gas and coal have led to the rapid development of chemical and petro-chemical industries, including synthetic fibres. Salem is the world capital of the cigarette industry. New Orleans, situated at the head of the Mississippi Delta, is the leading port of the region. Houston is the leading centre of petroleum refining and chemical industries. Dallas has now emerged as the financial and commercial centre of the South Miami with its beautiful beach and sunny and warm winters is an important tourist centre and health resort. It is also a growing air transport centre. Cape Kennedy in Florida is a centre for launching artificial satellites, space-ships and rockets.

The South, with its diversified agriculture and rapid industrial development, has been experiencing a boom as never before in its history.

The Central Basin

This region, also known as "Mid-West", is the key region of the United States in respect of agricultural, mineral and industrial production.

The region is a level to gently rolling lowland. Most of it was subjected to glaciation. Whereas the moraines and lakes abound in the north, the fertile deposits of the retreating glaciers are left over large parts as "till plains" in the south. It is the heartland of the agricultural United States.

An integrated network of navigable inland waters is the distinctive feature of the region. The Gulf of Mexico is connected with the St. Lawrence Seaway through the Mississippi, its tributaries and the Chicago Canal. The "Soo" canals connecting the Lake Superior with the lower lakes carry enormous traffic in wheat and iron-ore. The tonnage of goods passing through the canals exceeds that of the Suez, Panama, Erie and Barge Canal in the north-eastern United States, all combined.

The natural vegetation of the region consists of mixed forests in the north, hardwood forests in the lower south and the prairie grasses in the

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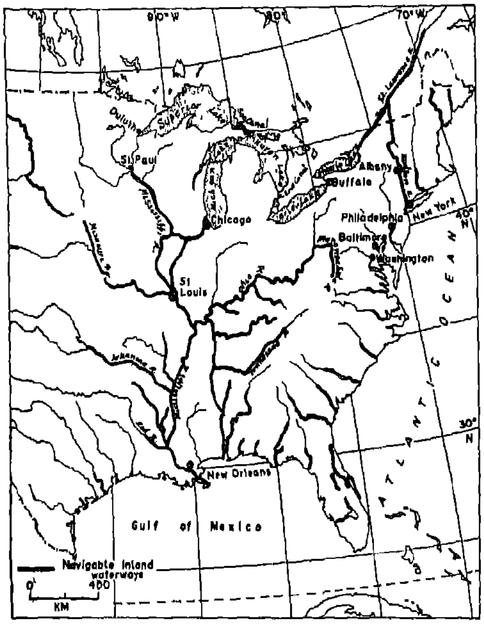


Fig. 33. Inland Waterways of the North-East and the Central Basin

Note the integrated network of inland waterways in these two areas of the United States. What part do they play in the location and development of industries ?

west. Today, however, very little forest is left as the land has been cleared for agriculture.

In the north lies the region of dairy farming Wisconsin and Minnesota form the core of the "dairy belt". They are the major source of butter and cheese consumed in the United States. Pasture, hay, oats, rye, potatoes and corn are grown in this region. Hogs and poultry are fed on corn, fodder and skimmed milk. The moderating influence of the lakes on the climate helps to develop horticulture in this region.

Characterized by rectangular pattern of roads and fields, the "corn belt" is the most important farming region of the Mid-West. This is a strip of about 300 kilometres in width from Central Ohio to Central Nebraska. It is one of the rich agricultural areas of the United States, and the greatest corn-growing region in the world. The total value of corn produced in this region exceeds the value of cotton produced in the country.

A growing season of about six months with hot days and warm nights, a rainfall of about 50 centimetres, level lands and fertile prairie soils combine to make this land grow huge quantities of corn. The development of special heavy yielding, less exacting and pest resistant varieties, large scale use of fertilizers, and mechanized farming have further contributed to the agricultural prosperity of the region.

Winter wheat, oats, barley, soyabeans and tobacco are the other crops grown in this area. Hay and corn are grown principally as feed for hogs, beef cattle and poultry. Corn is very good for fattening animals because of its easily digestible nutrients and high fat content. Animals from the Great Plains are brought here specially for fattening and resale.

The iron-ore deposits of northern Minnesota, especially its Mesabi Ranges, have supplied the bulk of American iron-ore since the beginning of the twentieth century. The cheap water transport provided by the Great Lakes has enhanced the economic utility of the iron-ore from the Lakes region and the coking coal of the Appalachians. The meeting points of the two raw materials, iron-ore and coal, along the southern lake shores have led to the development of iron and steel centres at Chicago-Gary, Cleveland, Detroit, Toledo, Lorain and Buffalo.

Cleveland is an iron and steel centre with diversified manufactures. Detroit is the great centre of the automobile industry. It began as a wagon-building centre. Its location on the Lake makes it easy to assemble the raw materials needed in the manufacture of motor cars. Chicago is an industrial giant with a wide range of products to its credit. Prominent among these are iron and steel, machinery of various kinds, agricultural implements, automobiles, electrical equipment, cement, tinned meat and various corn products. With twelve trunk railway routes converging on the city it is perhaps the largest railway junction of the world. Its airport is also one of the busiest. Its location at the southern

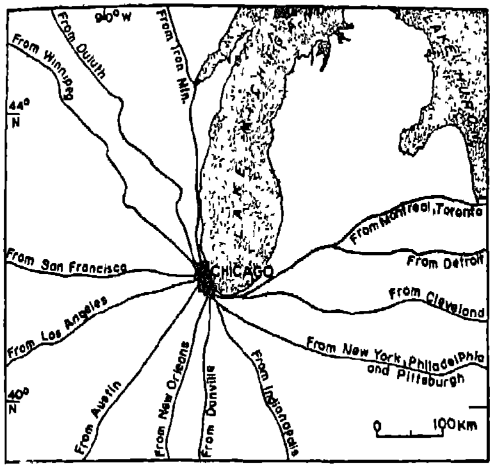


Fig. 34. Chicago, the Biggest Railway Junction

Note the nodal location of Chicago. What locational factors are responsible for the growth of this city ?

tip of the Lake Michigan is responsible for its nodal position.

Chicago-Gary district is now perhaps the largest producer of iron and steel, surpassing the production of the Pittsburgh region, the consequence, indeed, of the rich markets of the Mid-West. Minneapolis and St. Paul are the gateways to the Great Plains in the west and the notable flour-milling centres.

St. Louis situated at the confluence of the Missouri and the Mississippi is an important river port. It manufactures iron, steel and aluminium, refines oil, constructs aeroplanes, makes agricultural implements and leather goods, and produces railway equipment. Meat packing and flour-milling are its important industries. Kansas City, a famous livestock market, is a packing and flour-milling centre, standing now next only to Chicago.

The Great Plains

This region of grasslands, although very sparsely populated, contributes substantially to the American economy. It is the nation's leading producer of wheat and the important grazing ground of its beef cattle.

Open grasslands, rolling fields and the skyline occasionally broken by tall grain elevators and silos are the common characteristics of the landscape of this region. The roads and railway lines, although few, run across the region almost in straight lines.

Roughly, the eastern half is the only region with agricultural possibilities, whereas the western half, or even little more, is but a grazing land. This agricultural region is further divided into the spring wheat belt of the north and the winter wheat belt of the south.

The American spring wheat belt covers the northern parts of this region. It produces high quality wheat, rich in gluten. Since it is sown in spring instead of autumn, it is known as spring wheat. Extremely cold winters preclude the possibility of sowing in autumn. In addition to wheat, it produces flax, barley and rye. Large areas are devoted to hay and fodder for farm animals.

The hard winter wheat is grown in Kansas, Nebraska, Wyoming and Colorado and further south. Farming is hazardous and often a gamble because of uncertain rains, heavy snow and cold wave Sorghums or jowar are also grown in this region. Soil erosion due to rain and more so by wind is a very big challenge for the farmers of the Great Plains.

The northern grazing lands are fertile but have inadequate rainfall. Nearly 80 to 95 per cent of the area is, therefore, left under permanent pastures. Cattle and sheep are the dominant livestock. Animals are taken to the corn belt for fattening, on their way to the slaughter houses.

The southern grazing section is almost entirely under pastures. Cattle, sheep and Angora goats are reared in large numbers. Agriculture is practised in irrigated areas. Lower Rio Grande Valley under irrigation produces grape fruits, beets, and early vegetables. The region has oil, natural gas, coal and potassium salts as its mineral wealth. Denver is the leading urban centre of the Great Plains region.

The Rocky Mountains and the Western Plateaus

This rugged region with all its spectacular scenery and valuable mineral resources is the most sparsely peopled part of the United States. It is the aridity of the region that prevents the intensive utilization of the land except in irrigated pockets. Grazing and lumbering are the only possibilities in many parts.

The Wyoming Basin which separates the northern Rockies from the southern is essentially a sheep grazing region. Coal has been found and some mines are being worked. The southern Rockies are important both for grazing and as a centre of tourism because of their natural beauty.

The northern Rockies are known for their mineral resources—copper, zinc, lead, gold, silver and phosphate. The Butte hill has yielded copper, worth well over 2,000 million dollars. It is, therefore, called "The Richest Hill on Earth".

In spite of its valuable forests, lumbering is not very important because of the lack of transport facilities. This factor is also responsible for the lack of agricultural development of the region. Sheep and cattle rearing and subsistence agriculture are, therefore, more important. The Columbia Plateau with rich black lava soil is a region of dry-farming

The Snake and the Columbia rivers are harnessed for agriculture and hydro-electricity. Grand Coulee Dam is an outstanding irrigation and power project of the nation. The availability of cheap power has attracted the aluminium industry, where the raw material, namely bauxite, comes all the way from Brazil.

The Great Basin, a region of inland drainage, is known for its extreme aridity. The oasis of Salt Lake is the only important region because of irrigation.

Copper mining is important in the Great Basin. The Salt Lake oasis is important even industrially. It is known for its non-ferrous milling and smelting. Fruit and vegetable canning, sugar refining and flour-milling are the important economic activities of the region.

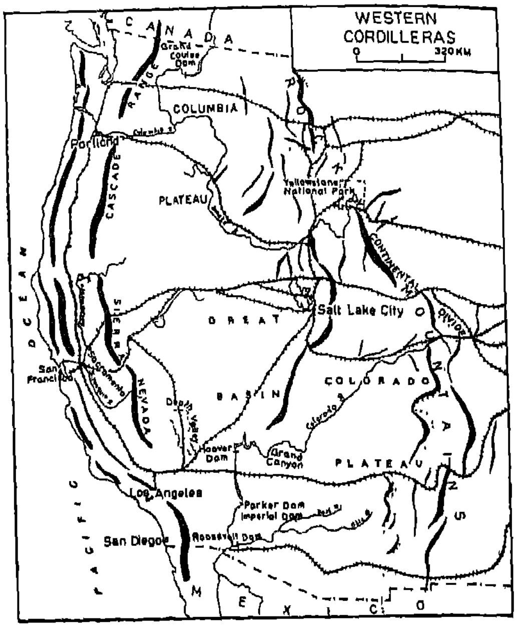


Fig. 35. The Pacific Coast Region of the United States

Study the relief features of this region. Note that there are a number of dams in this region. What factors are responsible for their construction in this region ?

The Colorado Plateau is a dissected tableland. The native Indians constitute an important proportion of the population. They live by sheep and goat grazing, weaving, pottery making and silver work. Copper and radioactive minerals are mined in this region.

The Pacific Coast

This region includes all the area lying between the Pacific coast on the one hand and the Cascade Mountains and the Sierra Nevada on the other. It is a region of striking contrasts, in climate, vegetation and patterns of settlements. Currently perhaps no other region in the United States is developing so fast as this.

The Pacific North-West has a mild and rainy climate. It is endowed with dark green forests of pine, fir and cedar. It is a land of snow-capped mountains, fertile valleys, majestic forests and a picturesque coastline.

Forest wealth of the region is of prime importance, and lumbering on the slopes of the Cascades and the Coast Range is a flourishing business carried out most scientifically. Douglas fir, cedar and hemlock provide valuable timber Rugged terrain and the huge size of trees have made lumbering a highly skilled operation involving use of big machinery.

Fishing is another important economic activity of the region Deep sea and coastal fishing have given Seattle and Portland the position of leading sea fish markets. More spectacular, however, is the inland fishing of salmon especially in the Columbia River.

The salmon sea fish every year return to this river for spawning. In spite of numerous dams and cascades hindering their way up the stream, the fish keep on swimming, leaping and jumping upstream to their spawning grounds. Special fish ladders have now been provided which make the upstream journey of the fish more easy. These fish ladders are a stair of pools rising gradually one over the other. Each pool is about 30 centimetres higher than the one below it.

Dairy farming and orchards account for the bulk of agricultural income. Seattle and Portland are the two leading urban centres of this region. Seattle is an industrial centre with its aircraft industries in the forefront. Portland is a commercial centre for timber and grain.

Northern California is a mountainous land clothed with dense forests of redwood, cedar and pine. It is a land of heavy rainfall, abundant water-power and sparse and scattered population.

Central and southern California is very different from the north. This sunny and semi-arid part is a land of winter rains and summer drought. The population concentration in its lowlands in places is among the densest of the United States. Scarcity of water is a serious problem in this land where population is growing at a rate to be found nowhere else in the whole country.

Mild and pleasant climate which permits outdoor living, and opportunities offered by agriculture, industry and education are responsible for the rapid growth of the State which now stands next only to New York.

Most of the crops are grown under irrigation. The Sacramento river in the north and the waters of the Colorado in the south, provide the badly needed water for agriculture through various irrigation schemes. This region specializes in vegetables and citrus fruits—oranges and lemons. The Los Angeles lowlands specialize in horticulture. The Central Valley grows cotton, rice, wheat, fruits, vegetables and hay.

Raising of livestock is also an important agricultural activity of California. Sheep and cattle are reared in the fine natural pastures along the foot hills of the mountains. Many of the cattle from the Western Cordilleras are brought here to fatten on these nutritious grasses before they are sent to the slaughter houses.

Commercial fishing is also an important activity of central and southern California. It is one of the important fishing regions of the country.

Gold and oil once put the State on the mining map of the United States Although it is fairly rich in minerals, its mining is now less important than its agriculture, manufacturing and even the tourist industry. It is now one of the leading industrial states of the country.

The urban and industrial centres of the State are Los Angeles and San Francisco. Los Angeles is an important production centre of aircraft and modern defence equipments such as guided missiles and rockets. Equally important is its production of movies. Fine weather is a major factor in attracting aircraft and film industry to this region. Los Angeles, also a big railway terminus and a leading airport of the region, is the largest metropolitan area on the Pacific coast and a leading electronics centre. Hollywood, the famous world capital of film industry, is a suburb of Los Angeles. Processed food, petro-chemicals, synthetic rubber, electronics, computers and agricultural machinery are the other prominent products of the local industry.

San Francisco, an ideal spacious natural harbour, is the western counterpart of New York. It is a leading railway terminus and an airport. It is often called the Western Gateway to the United States of America. San Diego, one of the beautiful cities of America, is its very important naval centre. It is a growing industrial and educational centre of the south-west.

The Hawaiian Islands

This is a group of volcanic islands. The volcanoes rise sharply above the sea shore, the Mt. Mauna Loa being the biggest and the most active among them. Situated at the cross roads of the Pacific, it is an important naval, air and military outpost of the United States. Only recently Hawaii has been admitted as the fiftieth State of the United States.

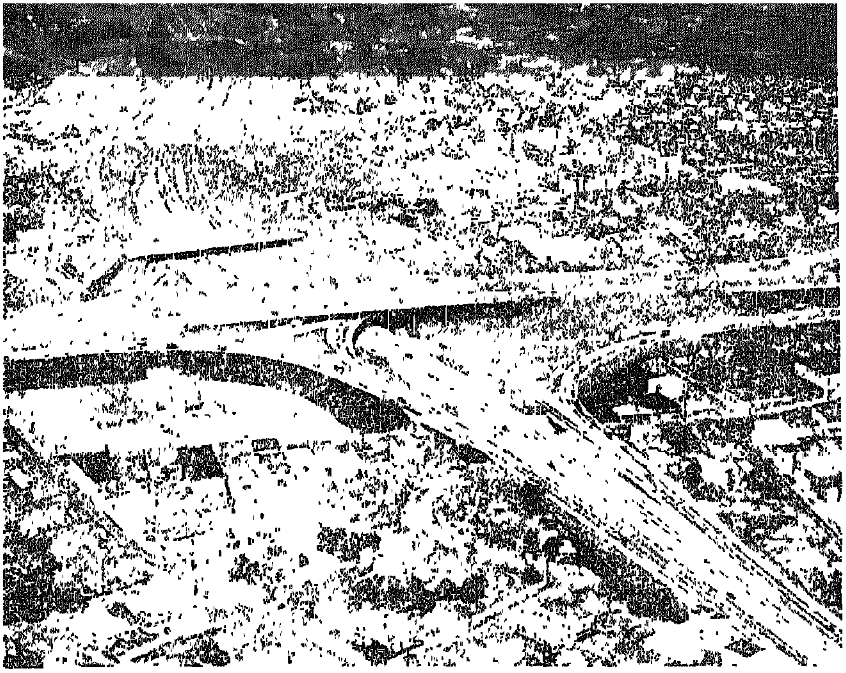
Honolulu is the capital city of the State where planes flying to the United States, Canada, Japan, East and South Asia and Australia across the Pacific, stop for refuelling.

Sugar-cane and pine-apples are the two agricultural products which are produced here more scientifically than perhaps anywhere else in the world. The yield of sugar-cane and the sugar content in the cane is the highest in Hawaii. Tourism is also an important industry. The bulk of the population of these islands is essentially of mixed Asian origin—the Japanese, Chinese, Koreans and Filipinos.

EXERCISES

Review Questions

1. Answer the following questions briefly:
    (*i*) Which is the most important geographical division of the United States?
    (*ii*) What is a conurbation? Which is the greatest of its kind in the world?
    (*iii*) What is the Fall Line? Name the major four urban centres located on it.
    (*iv*) Which is the top cash crop of the United States?
    (*v*) Name the pioneering multi-purpose project of America.
    (*vi*) Which is the busiest canal of the United States? Where is it situated?
2. Give reasons:
    (*i*) "Corn belt" is the most important farming region of the Mid-West.
    (*ii*) The transport centres on Great Lakes have now become the leading centres of iron and steel industry.
    (*iii*) Kansas City now stands next only to Chicago in several respects.
    (*iv*) Bauxite comes all the way from Brazil to Columbia plateau in the Rockies.
    (*v*) Forestry, lumbering and salmon fishing are very important in the north-west United States.
    (*vi*) California has been able to attract film and aircraft industries.

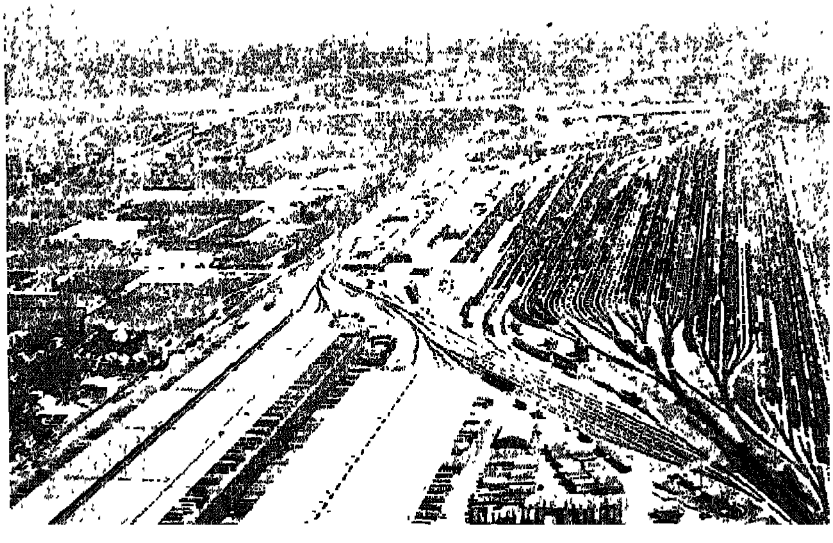


17. Freeways in Los Angeles, California *(Courtesy: USIS, New Delhi)*

With over 6·6 million people in 1964, Los Angeles is the second largest urban agglomeration in the United States and the largest on its Pacific Coast. What purpose do the freeways serve in affluent urban areas ?

18. Chicago, the Leading Railway Junction of the United States *(Courtesy: USIS, New Delhi)*

With 6 5 million people in 1964, Chicago rivals very closely with the urban agglomeration of Los Angeles. See the railyards, diesel locomotive shed and big freight houses What makes Chicago the national crossroad of the country ?

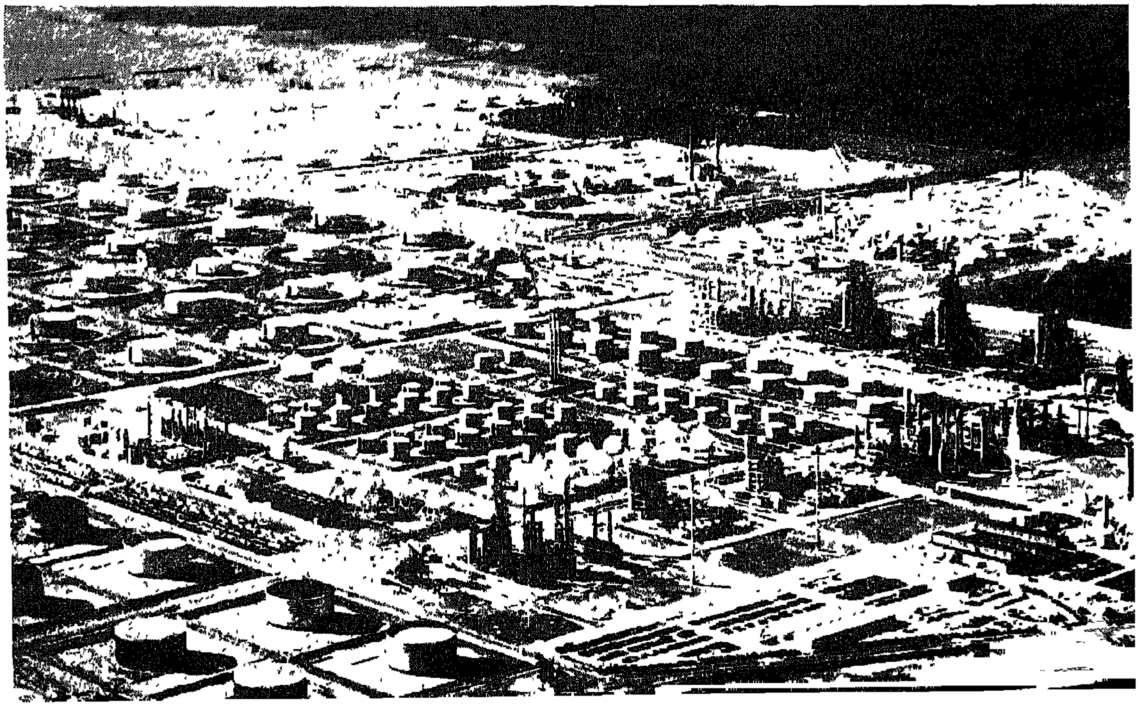


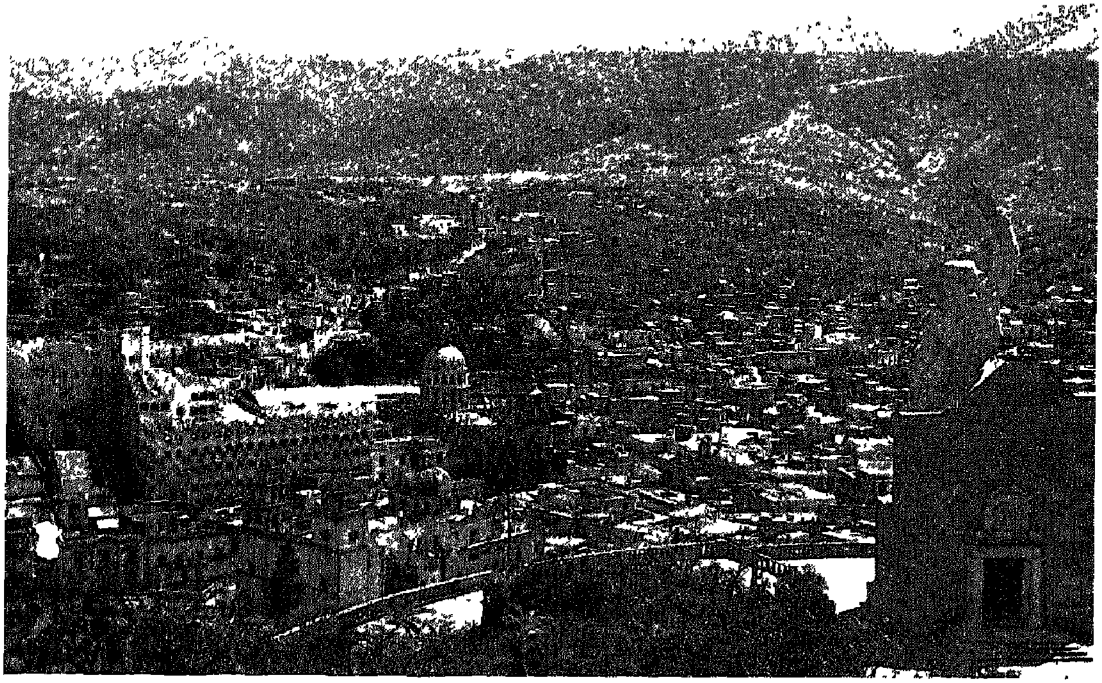
19. An Assembly Line in the Automobile Plant at Detroit *(Courtesy USIS, New Delhi)*

This is a view of the final inspection at the end of an automobile assembly line in Detroit. Between 1896 and 1965 the country produced over 200 million motor vehicles Every four families out of five have a car in the country. What makes Detroit a leading centre of automobile industry ?

20. A Modern Oil Refinery in the United States *(Courtesy: USIS, New Delhi)*

Of the total energy produced from various sources in the United States in 1965, nearly one-third came from the crude petroleum. A refinery such as this processes mineral oil into thousands of products. Can you name some petrochemicals?



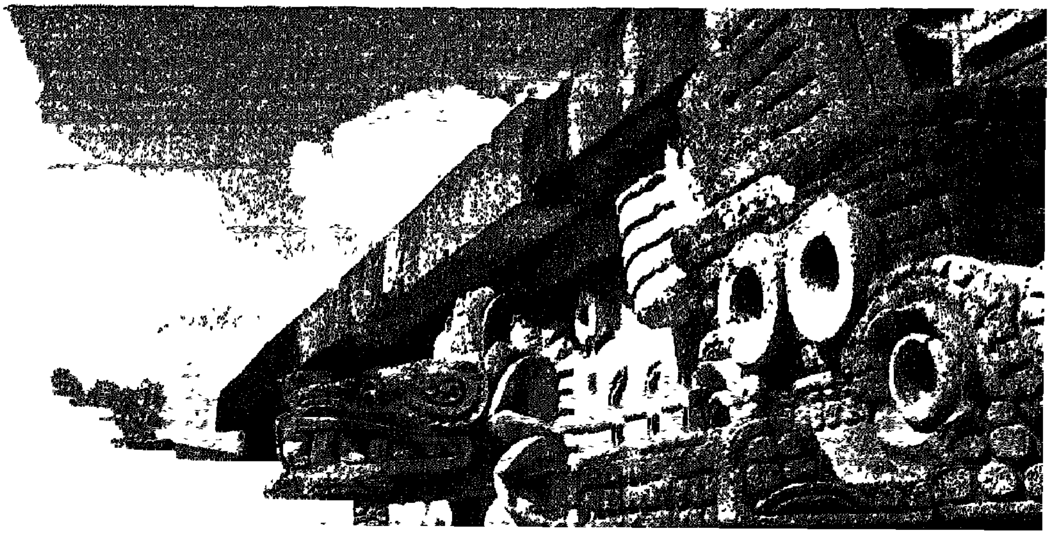


21. A Panoramic View of the City of Guanajuato in Mexico *(Courtesy: Mexican Embassy, New Delhi)*

This small city on the Central Plateau of Mexico is a mixture of the old and the new, typical of Mexico. Note the deforested slopes of the hills What do they suggest ? Do you see an old castle on the hill in the background ?

22. A Sculpture on an Old Temple in Mexico *(Courtesy: Mexican Embassy, New Delhi)*

Look at the carved plumed serpent's head on the wall of the old temple near Mexico City the capital of the country. How do the remains of an old plateau civilization compare with those of ours ?

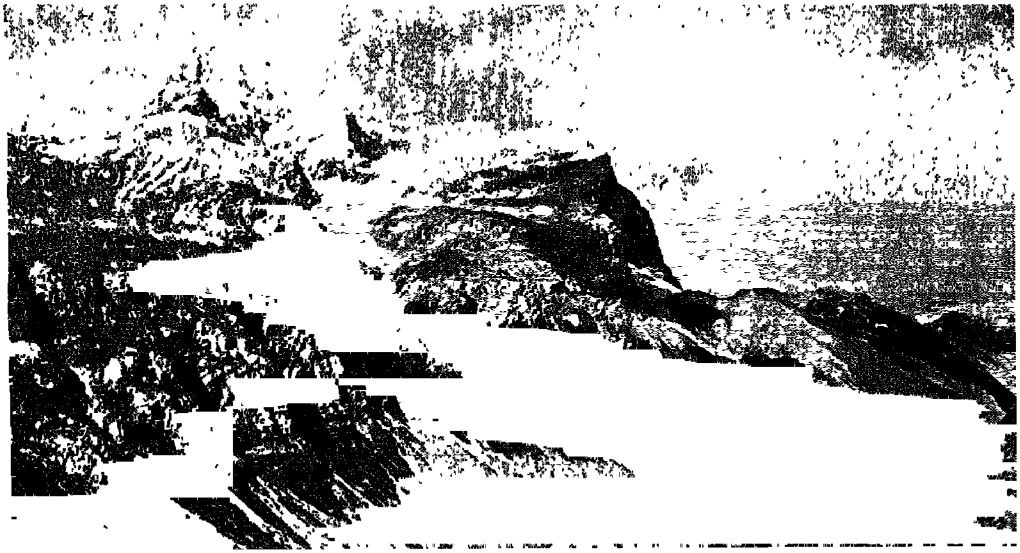


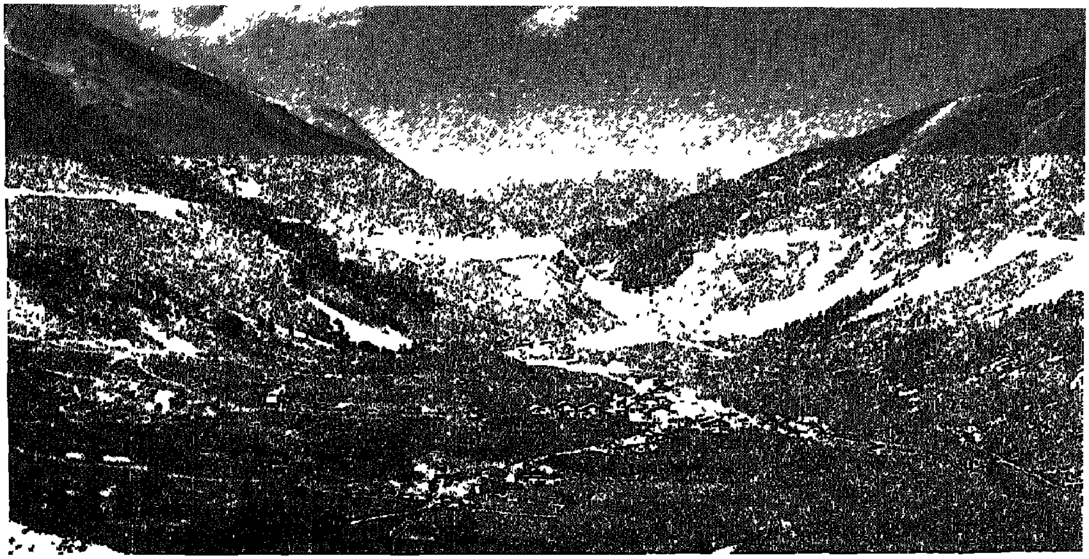
23. Where High Mountains and Deep Sea Inlets Crisscross *(Courtesy: Embassy of Norway, New Delhi)*

This is a settlement of fishermen along the rocky, barren and hilly coast of Norway. Look at the well-built houses, mechanized fishing boats and arrangements made for drying fish. Can you name the system of mountains shown in the picture?

24. The Alps Mountains in France *(Courtesy: Embassy of France, New Delhi)*

Alps are the young fold mountains of Europe comparable to the system of the Himalayas in India. In what respect do the two mountains differ from each other?



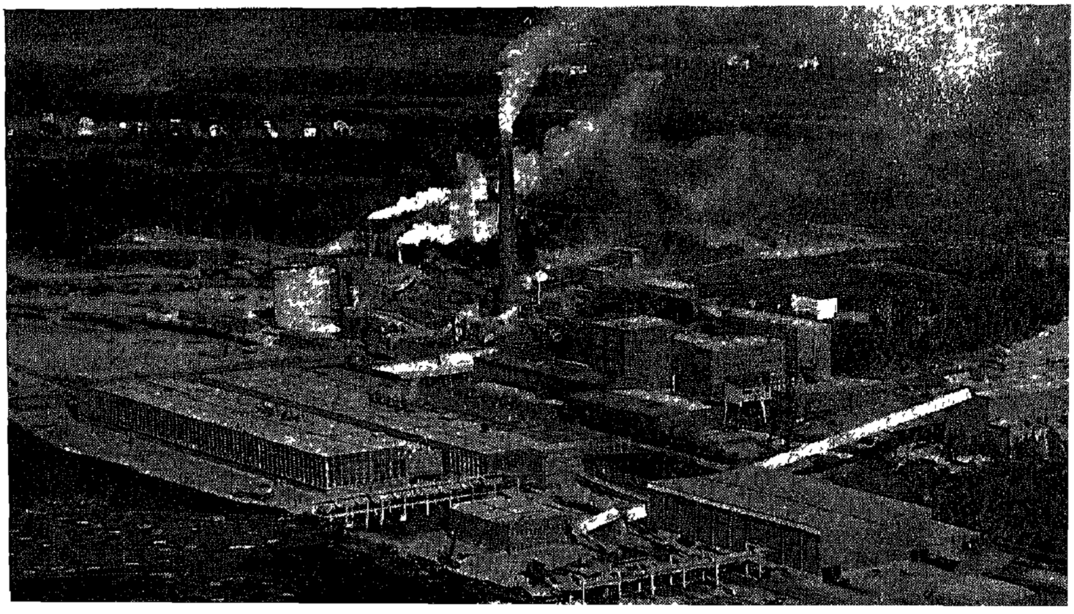


25. A Village in a High Mountain Valley in France *(Courtesy: Embassy of France, New Delhi)*

Look at the dam built in the hills for developing hydro-electricity. Also note the flat-bottomed valley in which the village surrounded by fields is situated. In what way has hydro-electricity contributed to the general prosperity of Europe?

26. A Paper-pulp Mill in Finland *(Courtesy: Embassy of Finland, New Delhi)*

With nearly seven-tenths of the total area under forests, Finland fells and cuts nearly 50 million cubic metres of timber mainly derived from pine, spruce and birch. About 86 per cent of its total exports consist of forest products such as timber, pulp and paper. Why is forest wealth called the 'Green Gold' of Finland?

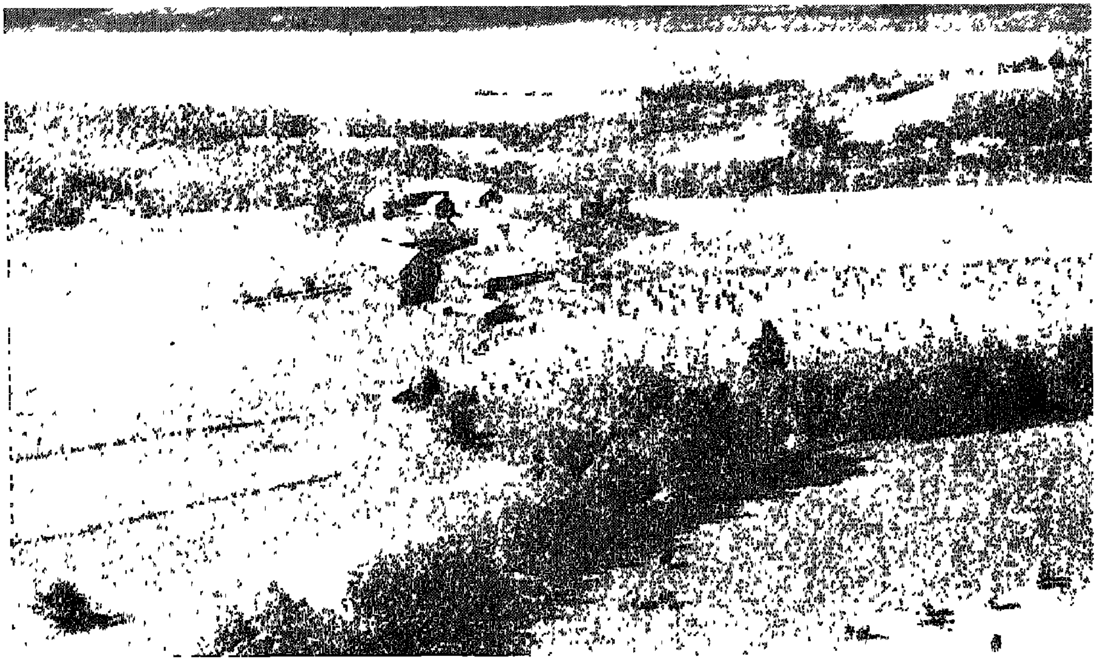


27. Mechanized Wheat Farming in Yugoslavia *(Courtesy· Embassy of Yugoslavia, New Delhi)*

Europe as a continent has the largest proportion of arable land with wheat as its staple food crop, accounting for about a fifth of the produce Look at the giant machines harvesting wheat. Why are they called combines?

28. The Jersey Herd on Windsor Farm in England *(Courtesy: British Information Service, New Delhi)*

The United Kingdom is known for some of the best breeds of dairy cattle, such as Jersey, Guernsey and Ayreshire. On an average its milking cow yields more than 3 tonnes of milk a year. Why is the licensing of bulls meant for breeding purposes made compulsory in this country?

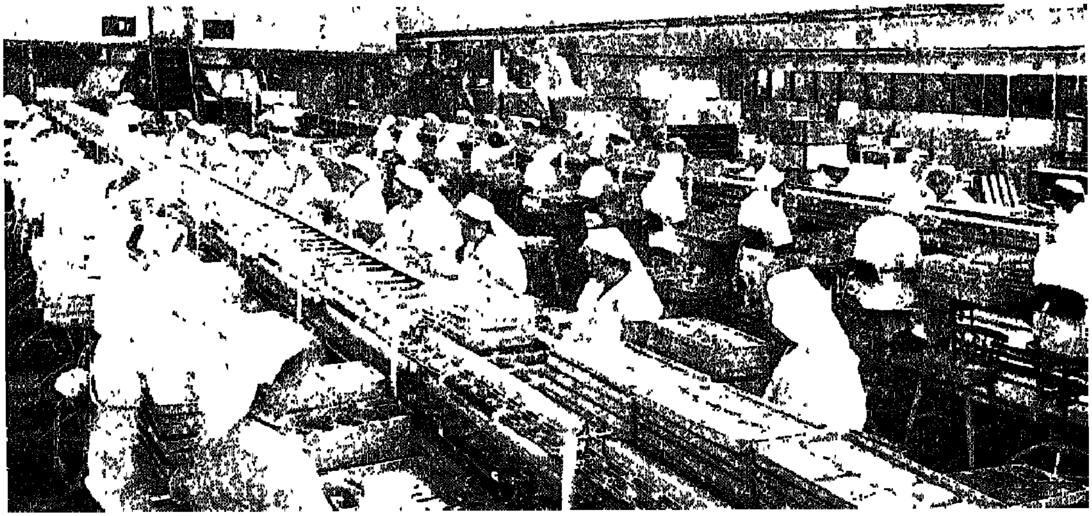


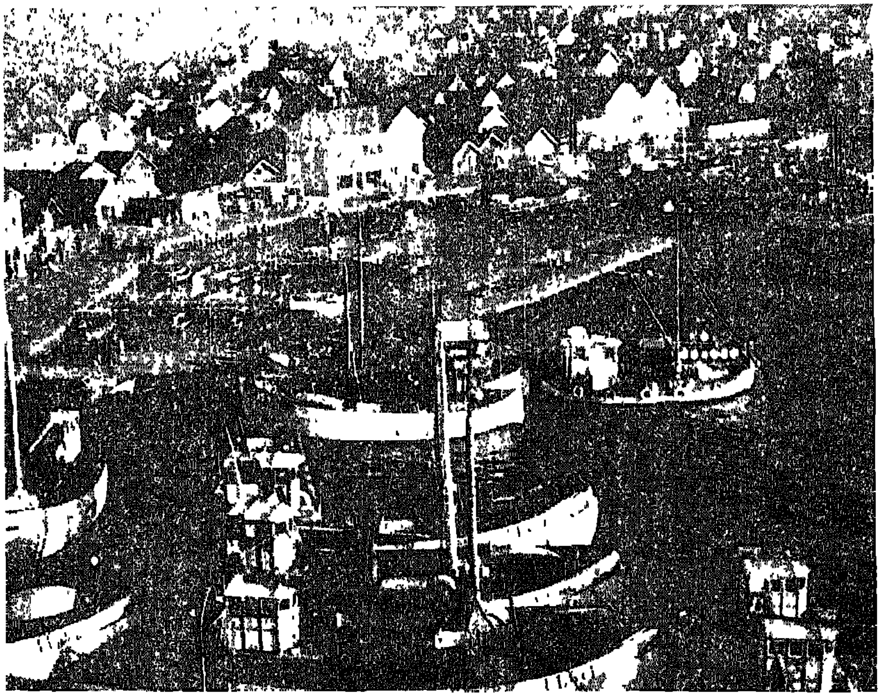
29. A Dairy Farm in Norway *(Courtesy: Embassy of Norway, New Delhi)*

Fishing, forestry and dairy farming are the major primary occupations in Norway. Do you see the nice houses, neatly kept fields, specially cultivated feed crops and heaps of hay drying in the fields ?

30. A Fish Canning Plant in Norway *(Courtesy Embassy of Norway, New Delhi)*

Sea is the primary source of livelihood in Norway It exports nearly three-fourths of its fish catch. Note the cleanliness and fine working conditions provided to the workers in this plant. How is it that the factory is manned almost entirely by women?



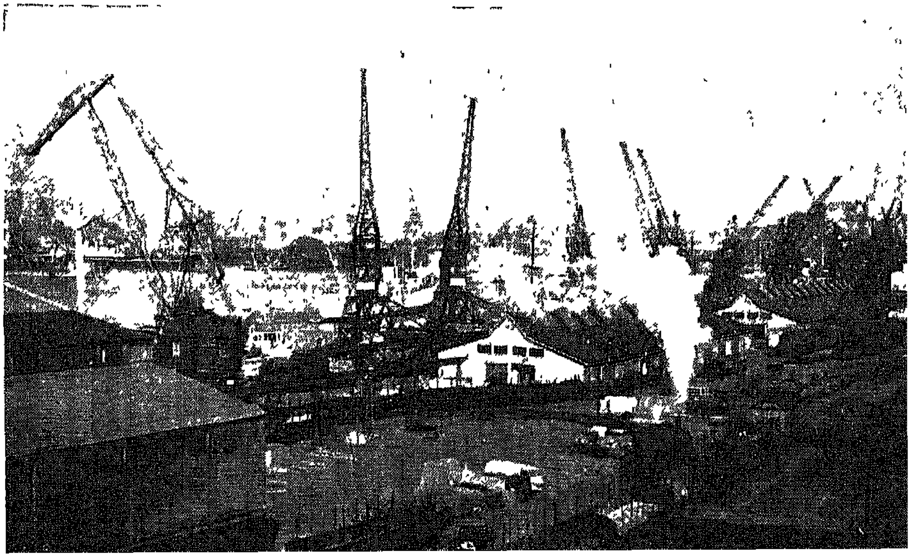


31. A Fishing Port and a Health Resort in Sweden *(Courtesy: Embassy of Sweden, New Delhi)*

Gravarne is a small fishing port and a health resort on the western coast of Sweden It is a country where the expectancy of life is one of the highest in the world Its national health insurance scheme covers every person above 16. How do health resorts help persons of average means?

32. Gothenburg, the Major Swedish Sea-Port *(Courtesy: Embassy of Sweden)*

This spacious and deep-water port has several ship-yards, repair docks and modern facilities of loading and unloading. The major exports of Sweden are machines, transport equipment, pulp and paper, iron and steel, lumber and iron-ore. Which are its major imports?



3. Make out correct pairs from the two columns:

(*i*) The naval outpost of America.	Detroit
(*ii*) The Western Gateway to the United States.	Pittsburgh
(*iii*) The world capital of the film industry.	Wisconsin-Minnesota
(*iv*) A famous copper mine.	Butte Hill
(*v*) The biggest railway junction.	San Francisco
(*vi*) The largest iron-ore deposits in the continent	Salem
(*vii*) The core of the dairy belt.	Mesabi Range
(*viii*) The capital of the automobile industry.	Pearl Harbour
(*ix*) A coal and steel city.	Cape Kennedy
(*x*) World capital of the tobacco industry.	Chicago
(*xi*) Satellites launching station.	Hollywood

4. Give an account of the North-East United States with special reference to its industries. State how the region is able to hold its dominating position in the face of changing circumstances.
5. Trace the geographical factors responsible for the phenomenal growth of New York City.

Finding Out

6. Gather information on mechanization of agriculture in the United States. Collect pictures and present a pictorial or illustrated report to your class.

Cartographic Work

7. Draw the suitable sketches showing the location of New York and Chicago. Depict various geographical factors contributing to their rapid growth. Compare these two sketches carefully and list all the points of similarities and differences between the two.

Picture Reading

8. Study the picture No. 18 and the location of Chicago on a map and state what makes this city the largest railway junction in the world.

Study carefully the pictures No. 6 and 9 to 19. List the important points that strike you about each of the broad geographic regions to which these pictures belong.

Films Available

(*i*) The Northeastern States. No. 917.4, 11 mins, English; D.T.A.
(*ii*) The Southeastern States No. 917.5; 11 mins, English; D.T.A.
(*iii*) The Middle States. No. 917 7; 11 mins; English; D T.A.
(*iv*) The Northwestern States. No. 917.8; 11 mins; English; D.T.A.
(*v*) The Far Western States. No. 917.9; 12 mins; English; D.T.A.

(*vi*) Geography of the Rocky Mountain States. No. 917.8; 11 mins; English; D.T.A.

(*vii*) Hawaii, The 50th State. 10 mins; English; U.S.I S.

Further Readings

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CHAPTER 5

Mexico and Central America

Lying to the south of the United States, the countries of Mexico, Central America and the West Indies together constitute the southern part of the North American continent.

The river Rio Grande, which separates Mexico from the United States, happens to act more as a cultural divide than a mere international frontier To the north of this river lies Anglo-America, and to its south Latin America. Whereas the former is oriented to the culture of northern Europe, the latter's orientation is towards the Latin and Roman cultures of the southern or Mediterranean Europe. This cultural distinction between the two Americas—Anglo-America and Latin America—is, therefore, more a matter of history than mere geography.

Situated largely within the tropical zone of North America, the region is characterized by sharp contrasts in relief, climate and vegetation.

MEXICO

Unlike the northern Anglo-American nations of the "New World", Mexico is an old land with a distinct culture of its own. The native Indians of Mexico had built huge temples of stone which remind us of the pyramids of ancient Egypt and the old temples of our country. They had also developed big cities. For example, Mexico City, one of the biggest metropolitan centres of the Western Hemisphere, was a flourishing city when Mexico was conquered by the Spanish people. The Aztec, the Toltec and the Mayan people of Mexico had even built their empires in the past with distinctive cultures of their own. It is on this ancient culture that the Spanish way of life has been superimposed and in the process has emerged the Mexico of today.

Mestizos—mixed local Indians and Spanish—form 55 per cent of the total population of Mexico. Nearly 29 per cent are Indians. It is estimated that about 10 to 15 per cent people are of pure European descent; and the Negroes are about 1 per cent. There is a strong influence of Mexican Indians on the cultural, political and economic life of the country. The percentage of pure Indians and the white people has been gradually decreasing.

Physical Setting

The most dominant geographic feature of the country claiming an area of about 2 million square kilometres is a high central plateau. It

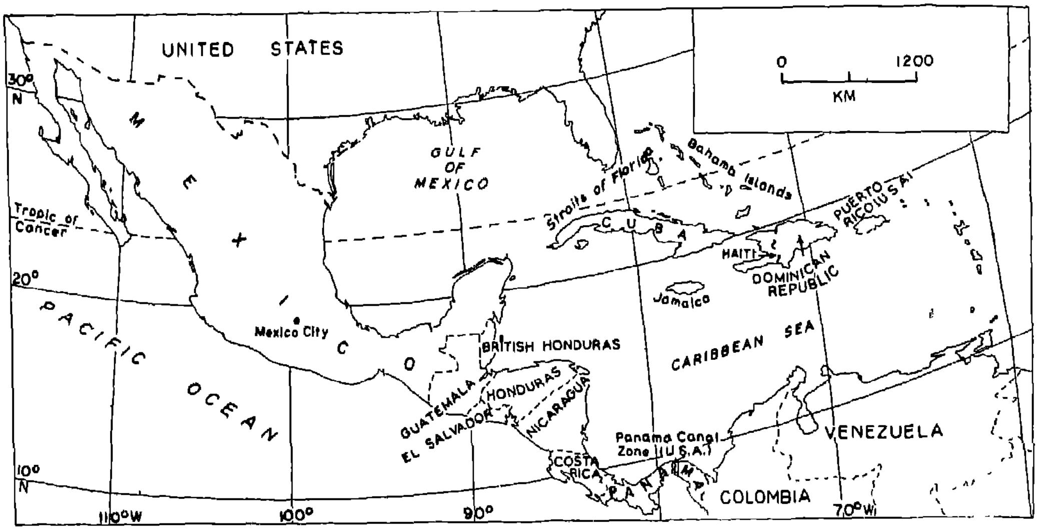


Fig. 36. Political Map of Mexico, Central America and the West Indies

Note the location of Cuba in relation to the United States. Study carefully latitudinal extent of the region. Why is this region bracketed with Latin America even though it belongs to North America ? What makes Panama a country of international significance ?

is over 1,000 metres in altitude in the north rising to about 2,500 metres in the south.

The Central Plateau is bounded by the mountain ranges of the Sierra Madre Occidental in the west and the Sierra Madre Oriental on the east.

These mountain ranges rise sharply from the narrow coastal plains, both along the Pacific and the Gulf of Mexico. The ranges rise over 3,000 metres with some of the volcanic peaks rising to an altitude of 5,500 metres above sea level.

The Rio Grande is the only important river used for navigation. Its location along the northern frontier, however, limits its economic utility to the country as a whole. The River Colorado drains into the Gulf of California and is of little use to the country.

Relief of the land has a profound influence on distribution of both temperature and rainfall in Mexico. In fact, climate of any place in Mexico is determined more by altitude than by latitude. The country is divided into three vertical zones for the description of its climate.

The coastal plains and areas lying within 900 metres above sea level have hot climates with the annual mean temperature of about 25°C or 26°C.

Areas lying within the altitudinal zone from 900 metres to about 1,800 metres above sea level have a temperate climate with a mean temperature of about 24°C.

Areas with an elevation over 1,800 metres enjoy cool climates with an annual mean temperature of 23°C or less. In this region lie the important population centres including Mexico City.

Whereas Tabasco and Chiapas lowlands in the south may receive an annual rainfall of 500 centimetres and above, the parts of Baja California in the north-west pass years without any precipitation. As the Tropic of Cancer passes through the middle of the country, large area lies in the sub-tropical high pressure belt and is deficient in rainfall.

In southern coastal plains rainfall is heavy and the region enjoys tropical rainy climate. Rainfall is adequate in the southern Central

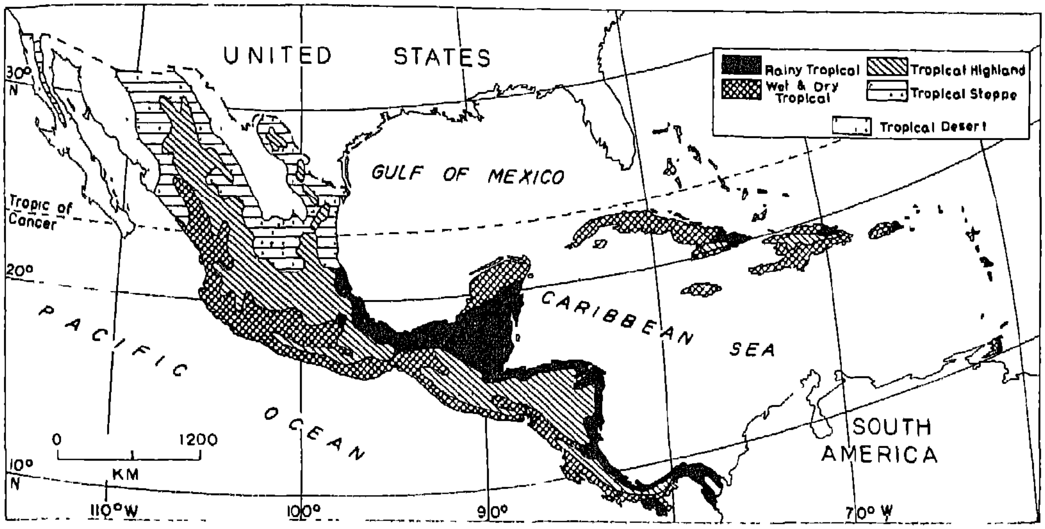


Fig. 37. Climatic Types of Mexico, Central America and the West Indies (After O. W. Freeman and J. W. Morris)

Note the areas enjoying rainy tropical and tropical highland types of climate. Why are the areas north of the Tropic of Cancer more arid than those to the south ?

Plateau and conditions become semi-arid to arid as one proceeds northwards. The country as a whole receives major part of its rainfall in summer.

The coastal plains are covered with a tropical rain-forest. These luxuriant forests give place to sub-tropical and temperate forests with the rise in altitude of mountain slopes. The steppe type of grasses predominate in the north, gradually merging with desert shrubs in the arid regions. Oaks and conifers are common in the mixed forests along the slopes of the higher mountains.

Economic Development

The arable land of the country is only 10 per cent of its total land area. Of the 20 million hectares of cultivable land, nearly half is left fallow every year. Permanent meadows and pastures occupy nearly 38 per cent of the total area. Approximately 17 per cent of the land is under forests.

In spite of the small proportion of agricultural land, 54 per cent of the population is engaged in agriculture which is the mainstay of the national economy. Agricultural products constitute nearly 60 per cent of the total exports of the country.

Because of inadequate rainfall, nearly four-fifths of the agricultural land needs irrigation facilities. By 1950, nearly one-fifth of the land was brought under irrigation. Recently radical reforms in land tenure were introduced by the Government to shake the feudal structure of the society and better the lot of individual farmers.

The important crops are corn, wheat, cotton, sugar-cane, coffee and beans. In terms of value, cotton is perhaps the most important crop. Cotton and coffee are the two leading agricultural exports of the country. Cocoa, rice and cottonseeds are other less important products of Mexican agriculture. Animal husbandry is an important activity as a large number of cattle, pigs, sheep and horses are reared. Some improved varieties of beef cattle are exported to the United States.

Mexico leads the world in the production of

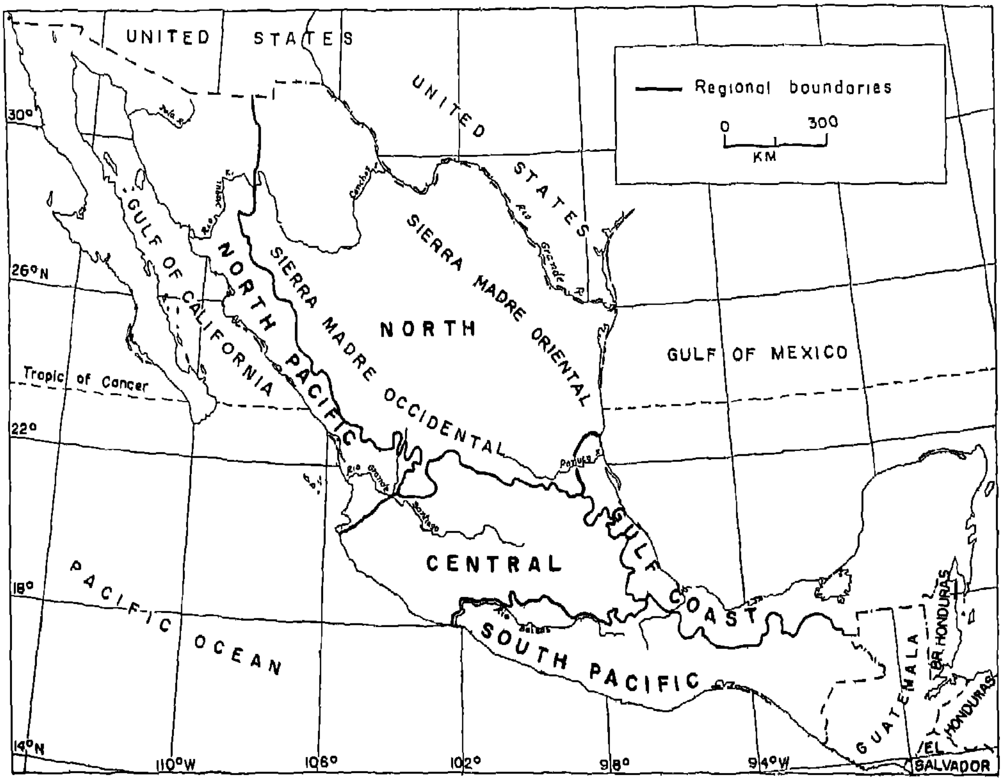


Fig. 38. Mexico—Geographical Regions

Note the geographical regions of Mexico Compare this map with that of the Climatic Types of Mexico and Central America. How does relief of this region influence the distribution of rainfall ?

silver, and stands third in the production of lead and fifth in antimony, mercury and graphite. It also produces sulphur, zinc, gold and copper. Minerals and metals account for nearly a fourth of the country's total exports. Mexico has some rich reserves of petroleum. Its petroleum industry has been nationalized. The country produced over 16 million tonnes of crude petroleum in 1964.

The important industries are iron and steel, textiles and food processing. Its production of steel is over 2 million tonnes. It also produces cellulose, paper, glass and electrical goods.

Regions of Mexico

Mexico is divided into (*i*) the Central Region, (*ii*) the Gulf Coast Region, (*iii*) the North Region, (*iv*) the North Pacific Region and (*v*) the South Pacific Region.

The Central Region is the heart of Mexico where about half the population of the country is concentrated on only a seventh of its total area. The region is rich in minerals and is most advanced in industrial development. With a rainfall between 50 and 100 centimetres it is an important agricultural region, and produces maize and beans. Mexico City is the national capital having a population of over three million people. It is the country's leading manufacturing centre and a transport hub.

The Gulf Coast Region is a flat low-lying area with a tropical rainy hot climate. Land is mostly under rain-forests and is covered with swamps in many places. Coffee is the principal crop of this area. Bananas, corn and cotton are the other agricultural products. Mexican oil-fields are located in this area with Tampico as its major oil producing and refining centre.

The Northern Plateau Region of Mexico is a thinly populated semi-arid to arid region. Grazing is the major activity of this steppe-like area. Cotton is the principal irrigation crop. It is also the leading wheat producing region. The real wealth, however, comes from its mineral resources, namely lead, zinc, silver, copper and gold. Monterrey, the only iron and steel centre of the country, is located here as it possesses both coal and iron-ore.

The North Pacific Region is too dry and isolated for any development. It has the lowest density of population, settlements being confined to mining camps and pockets of irrigated lands where sugar-cane and wheat are grown. The leading copper mines of Mexico are located in this arid part of the country. Tuna is an important catch along the Pacific coast where small fishing villages are located.

The South Pacific Region is a land of varied relief. It is almost completely isolated from the rest of the country. The region is well watered and highly mineralized but perhaps the least developed in the country. Coffee, banana and forest products are exported from this area.

CENTRAL AMERICA

This narrow mountainous land stretching from Mexico on the North to Columbia in the south is a bridge between the two Americas—North and South. These mountain ranges are a part of the Western Cordilleras of the Americas.

This region with a total area of over half a million square kilometres is divided into half a dozen republics and two dependencies. The republics in order of their size are Nicaragua, Honduras, Guatemala, Panama, Costa Rica and El Salvador. British Honduras and the Panama Canal Zone are still the dependencies of the United Kingdom and the United States of America, respectively.

This region has a population of 12.7 million people, with the over-all density of 24 persons per square kilometre.

The region is as varied as is the political map of its area. Broadly, the area can be divided into three major physical divisions—the Central Highlands, the Caribbean Lowlands and the Pacific Coastal Belt.

The Central Highlands

It is by far the most dominant relief feature. These highlands are the remnants of folded and faulted mountain ranges deeply cut by river valleys Their elevation ranges between 600 and 2,100 metres above sea level. At places the mountain ranges are surmounted by volcanic peaks rising to heights of 2,700 to 3,700 metres.

It must be noted that this mountainous region supports the bulk of the population. Most of the capital cities and other leading urban centres are also located in this region.

These highlands contain both densely populated regions as well as the sparsely peopled areas. The areas of the latter category are either due to very steep and rugged terrain, or rainy forested mountain slopes or deep valleys lying in rain shadow areas.

The dense population on the highlands is mostly due to their rolling relief, moderate to cool climate, adequate rain, open woodlands and grasslands and productive lava soils. The Spanish people preferred this region because the moderate climate of the region suited them very well.

Farming and grazing are the major economic activities supported by mining and manufacturing on a small scale. Subsistence agriculture is practised side by side with some commercial plantations.

A few big landlords with a large number of rather poor peasants working under them is the common tenancy feature of this region.

Between the elevations of 600 metres and 1,600 metres above sea level, are grown corn, cassava, beans, vegetables, sub-tropical fruits and sugar-cane. Farmers of this region also tend a few domestic animals. At higher elevations corn, wheat, beans, potatoes, vegetables and temperate fruits are grown.

Commercial agriculture in the highlands is confined to the production of coffee for export and sugar-cane, tobacco, vegetables, fruits and dairy products for selling them in urban centres. The principal areas where coffee is grown are the highlands of Costa Rica and Nicaragua, valleys in Honduras and uplands of El Salvador and Guatemala. Coffee is grown both on small farms and big estates.

The Caribbean Lowlands

These lowlands are wider than the Pacific Coastal Belt. These hot, rainy and heavily forested lands infested by insects and disease are sparsely populated. They held no attraction for the people of Spain.

Only recently this region is experiencing an air of change, with the introduction of banana plantations. The alluvial soils of these lowlands are as suitable for bananas as is the hot, humid and rainy climate of the region. Manila hemp and rubber are other promising plantation crops of the region. Tropical lumber, mostly hardwood, and chicle, the base for chewing gum, are the important exports of the lowlands.

The Pacific Coastal Belt

The narrow coastal belt along the Pacific becomes fairly wide in Panama. These lowlands are hot and humid all through the year. Rains are generally confined to summer season well over six months, the rest of the period being almost dry. This region is far better for settlement as against the Caribbean Lowlands. Yet, it is a sparsely peopled area. It is occupied by the white people and the Mestizos. Farming followed by grazing and shipping are the major activities of the people in this area.

The chief commercial crops of the Pacific coastal lands, especially in Panama, are bananas, sugar-cane, rice, cotton and tobacco.

The table gives an idea about the size, total population and its density and the chief exports of various countries in this region.

CENTRAL AMERICA

Country with its capital	Area in sq. km.	Population in thousands (1964)	Estimated density of population per sq. km. (1964)	Chief exports
Guatemala (Guatemala City)	108,889	4,305	40	Coffee, bananas
El Salvador (San Salvador)	21,393	2,824	132	Coffee, cotton
Honduras (Tegucigalpa)	112,088	2,092	19	Bananas, coffee, lumber, silver
Nicaragua (Managua)	139,700	1,597	11	Cotton, coffee, gold, lumber, sugar
Costa Rica (San Jose)	50,700	1,387	27	Coffee, bananas, cocoa
Panama (Panama City)	75,650	1,185	16	Bananas, shrimp (fish), sugar, cocoa, coffee
Panama Canal zone	1,432	54	38	
British Honduras (Belize)	22,966	103	4	Lumber

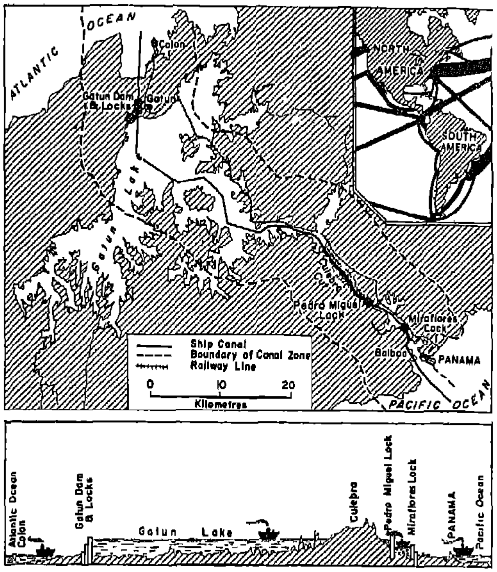


Fig. 39. The Panama Canal

Note the location and alignment of the Panama Canal. What are the natural factors that have favoured the construction of this canal ? Why was the construction of locks necessary in this canal ? Which countries have benefited most from this canal and why ?

The Isthmus of Panama

The significance of the Isthmus now lies in the Panama Canal, which is a man-made gateway to the Pacific Ocean. The Canal linking the two oceans brings the two continents of North and South America still closer. The Canal which was opened to traffic in 1914 is constructed, owned and operated by the United States. The Panama Canal zone lying within the territory of Panama Republic, is 16 kilometres wide, and has been leased to the United States.

The construction of this Canal on this hilly isthmus was a great feat of engineering and a grim fight against the tropical diseases.

The Canal is 65 kilometres long from shore to shore. Its width varies between 30 and 90 metres and has a minimum depth of 12 metres. The highest point of the Canal is at an altitude of 25 metres above sea level This has necessitated the construction of locks in the Canal in order to raise and lower ships. There are three pairs of locks on each side of the summit elevation.

By letting water into the lock, the level of its water is raised enabling the ship to enter the next lock standing at a higher level. Similarly, the ship is lowered by letting out water from the lock so that the ship is able to enter the next lock lying at a lower level.

It takes about eight hours to pass through the Canal. A ship is hauled by "mules"—the engines running along the banks

The port of Colon is situated on the Caribbean Sea in the north, whereas the port of Panama stands on the Panama Bay on the Pacific side.

The ships passing through the Canal avoid the longer route round the Strait of Magellan. This results in saving time and money. It saves 12,640 kilometres from New York to San Francisco and 14,240 kilometres from New Orleans to San Francisco. The distance saved between Liverpool and San Francisco is about 9,100 kilometres. The route from New Zealand to North-west Europe is also shorter via Panama Canal than by the Suez. The Panama route is very useful for quick passenger and mail transport.

THE WEST INDIES

A group of islands that was the first to be discovered by Columbus was named as the Indies as he was all the while under the illusion of having discovered a new western route to India. Naturally when the myth was exploded this group of Islands of the Western Hemisphere came to be known as the West Indies.

These islands forming a broad arc from Cuba in the north to Trinidad in the south represent the crests of mountain ranges partially submerged under the Caribbean Sea. The highest peaks of these island ranges rise to a height of about 3,000 metres above sea level. As against this some of the islands are slightly above sea level and are formed of recent coral deposits.

The islands are surrounded by warm ocean

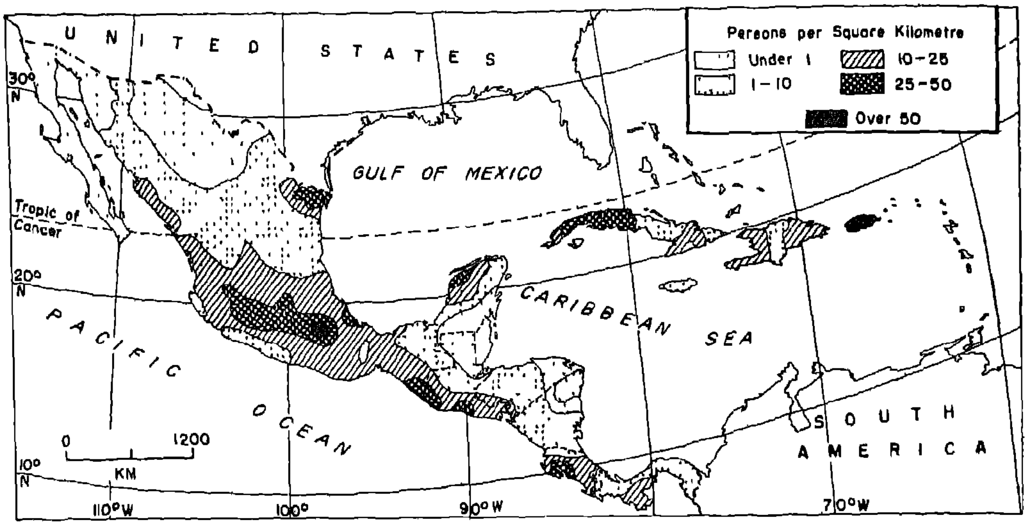


Fig. 40. Population Density of Mexico, Central America and the West Indies (After O. W. Freeman and J. W. Morris)

Note the uneven distribution of population. Which parts are most densely populated? How would you account for their high density of population?

waters with average annual air temperatures varying between 25°C and 29°C. Situated within the zone of the north-east trade winds, rainfall is received almost all through the year. However, the periods, May through July and September through December, are distinctly more rainy. The tropical hurricanes frequent this region with their characteristic fury, very often during the period, September through December

The islands which separate the Caribbean Sea from the rest of the Atlantic Ocean consist of three groups—the Bahamas, the Greater Antilles and the Lesser Antilles.

All these islands with an area of over 235,000 square kilometres have a population of about 22 million people. Their density of population is 93 persons per square kilometre as against 24 in Central America, 20 in the United States, 19 in Mexico and 2 in Canada.

The Bahamas

Bahamas, the most northerly group of the West Indies, consist of about 700 small islands of which only 22 are inhabited. The total land area of these islands is about 10,000 square kilometres They are mostly low, flat islands with lakes, mangrove swamps and coral reefs.

The climate being pleasant especially with warm winters, the islands attract a large number of tourists, mostly the Americans, from abroad. Tourism today is the leading industry of the islands.

The Greater Antilles

Cuba, Jamaica, Hispaniola and Puerto Rico are the four main islands that belong to this group. Cuba is by far the largest and the most important island of the West Indies.

Cuba possesses half the land area of the West Indies accounting for nearly a third of their total population. It has been a leading world exporter of sugar for a long time.

Nearly three-fourths of the country has a level to rolling topography. Its dark to yellow clay and sandy loams are deep and fertile. The terrain is suitable for mechanized farming.

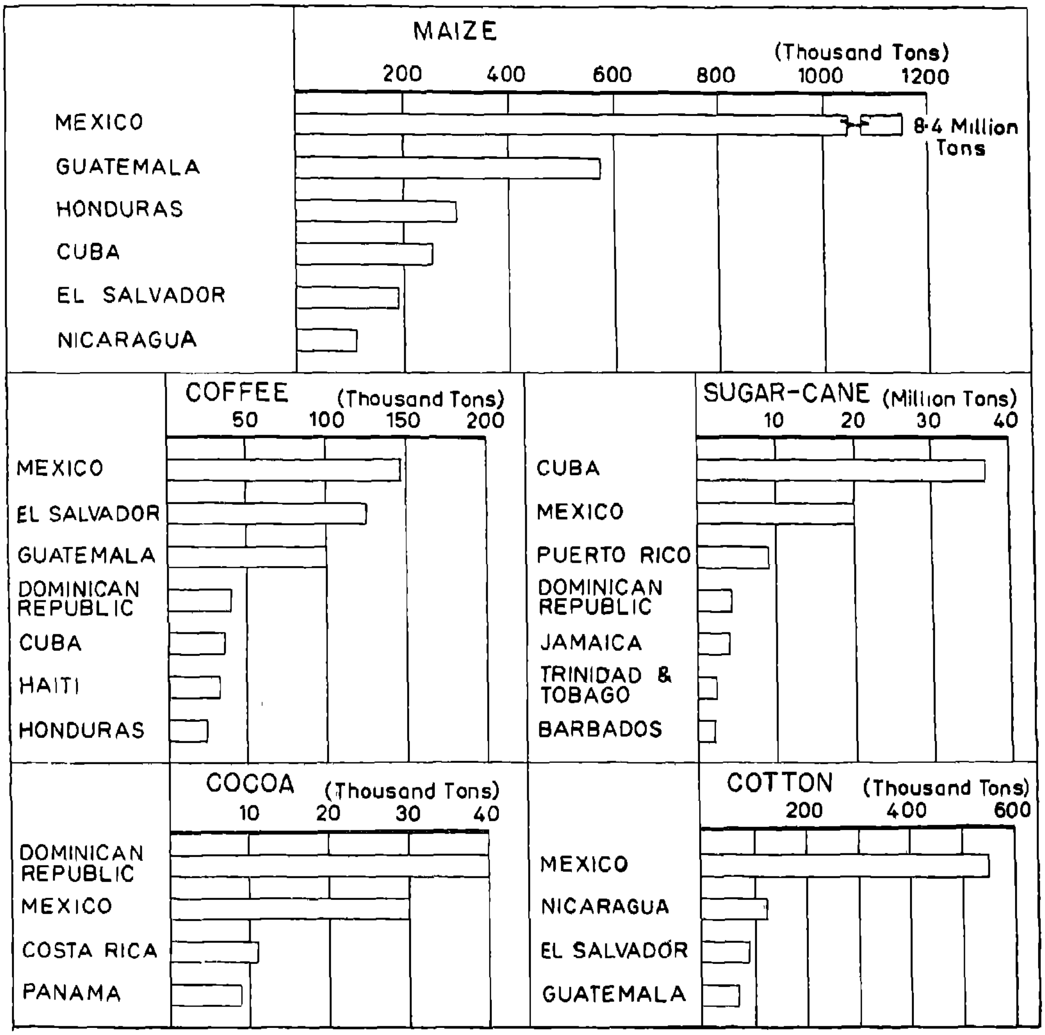
Actually 32 per cent of its land area is an agricultural land, with another 35 per cent under pastures Nearly a fifth of the land is under forests Thus the country can have a balanced economy. But so far, it specialized in a one-crop economy, namely the cultivation of sugar-cane, the mainstay of its economy.

With annual precipitation ranging between 100 and 175 centimetres and most of it being concentrated in the months from May to November, sugar-cane is the most dominant crop. It occupies about half the farmland. Now efforts are being made to diversify agriculture by the introduction of coffee, tobacco, fruits and vegetables

There were about 1,600 sugar mills scattered

Fig. 41. Production of Important Agricultural Commodities in Tropical North America

Note the important agricultural products of this region Which are the leading producers of maize, cocoa and sugar-cane ? Which crops are the products of plantation agriculture ?



over the countryside as sugar-cane is grown mostly in small farms These mills, however, belong to a big common organization.

The country mines manganese, chromite, copper and iron-ore Fishing and sponge collection is also well developed

After the Communist Revolution its political relations and trade with the United States have been completely cut off. Now most of its exports find their way to the Soviet Union and the East European countries. About 30 per cent of the Cubans are white, another 20 per cent Mestizos, 49 per cent Negro and mixed Negro-whites, and 1 per cent Asian Havana is the capital city of Cuba

Jamaica is a rugged island with only 14 per cent of level land It has a well developed karst topography in its limestone region

The island is thickly populated and has about 78 per cent Negroes, 18 per cent mixed Negro-whites and 4 per cent whites Kingston is the capital of this former British dependency

It exports sugar, rum and fruits, but its leading exports are bauxite and aluminium The island attracts a large number of tourists, mostly in winter.

Haiti is an independent country since long. It is a thickly populated agricultural land, growing coffee, cocoa, cotton and sugar-cane. Coffee and sugar are the main exports of this land.

Dominican Republic is another thickly populated agricultural land with a variety of agricultural exports —sugar, coffee and cocoa beans, bananas and tobacco. It also exports bauxite.

Puerto Rico is a commonwealth protected by the United States. It enjoys autonomy and self-rule in internal matters San Juan is the main urban centre. Majority of the people are whites. Large number of the Puerto Ricans migrate to the United States Sugar, coffee, tobacco and fruits are the major exports mostly destined to the United States. It grows cotton. It produces now a variety of manufactured goods—cement, textiles, iron and steel products. Besides this, the country has developed since long the cigar, rum and sugar industries.

The Lesser Antilles

This group of islands consists of two types—the low islands made of level limestone lands, and the high mountainous islands of volcanic origin. All the islands depend upon the exports of agricultural products. Very often they grow a few cash crops and import food to meet their own requirements. The density of population is generally very high. Negroes are the most numerous inhabitants of these islands

While the low islands with level lands engage in sugar-cane and other agricultural crops, the high mountainous islands specialize in tree crops like coffee, cocoa, vanilla, copra, bananas, limes, arrow-root and spices.

The islands of Trinidad, Aruba and Curacao form a different category. Trinidad has excellent soils and adequate rainfall for diversified agriculture. It produces sugar-cane, cocoa, copra, lime and other fruits. It, however, specializes in the production and export of mineral oil, petroleum products, and asphalt from Pitch Lake. Asphalt is used for surfacing the metalled roads. Aruba and Curacao import oil from Venezuela and export refined petroleum in very large quantities. Almost the whole population is urban, with very few people engaged in animal grazing.

The table on the opposite page gives an idea of the area, population, density and exports of the major islands, or island groups.

Note that the population of the West Indies is thus larger than that of Canada while its total area is even less than one-fortieth of that country.

THE WEST INDIES

Country	Area sq. km.	Population (thousands) (1964)	Density per sq km (1964)	Chief exports
Cuba	114,524	7,434	65	Sugar, tobacco, coffee, fruits
Haiti	27,750	4,551	164	Coffee, sugar
Dominican Republic	48,734	3,452	71	Sugar, coffee and cocoa beans, bananas, bauxite, tobacco, chocolate
Puerto Rico	8,897	2,584	290	Textiles, sugar, coffee, tobacco, fruits
Virgin Islands (U.S)	344	41	118	Sugar, rum
Bahamas	11,405	134	12	Salt, lumber, vegetables, fish
Barbados	430	242	563	Sugar, rum
Jamaica	10,962	1,739	159	Bauxite, alumina, sugar, rum, fruits, vegetable oil
Leeward Islands	1,054	143	135	Sugar, cotton, banana, fruits
Trinidad & Tobago	5,128	949	185	Petroleum and petroleum products, sugar, textiles, fertilizers
Windward Islands	2,138	333	155	Sugar, citrus fruits, bananas, cotton, rum, copra
Netherland Antilles	961	205	213	Refined petroleum
Guadeloupe	1,779	306	172	Sugar, bananas, rum, coffee
Martinique	1,102	310	281	Bananas, sugar, rum
The West Indies	235,208	22,423	95	Sugar, coffee and cocoa beans, tobacco, rum, beans, bananas, citrus fruits, bauxite

EXERCISES

Review Questions

1 Answer the following questions briefly:
  (*i*) What is Latin America?
  (*ii*) How does it differ from Anglo America?
  (*iii*) In what mineral does Mexico lead the world?
  (*iv*) Which country has been the leading exporter of sugar in the world?
  (*v*) Name the four major plantation crops of Central America.

2 Give reasons
  (*i*) Mexico is an old land in the New World
  (*ii*) Climate of any place in Mexico is determined more by altitude than by latitude
  (*iii*) Annual rainfall in Mexico varies from no rain at all to as much as 500 centimetres from place to place.
  (*iv*) Only 10 per cent of the land area in Mexico is arable.
  (*v*) The Bahamas attract nearly 300,000 tourists, mostly Americans every year.

3 Complete the following statement with the most appropriate ending:
Recently Cuba has taken to diversification of agriculture because
  (*a*) fluctuations in the prices of sugar in the world market adversely affected its farmers
  (*b*) it lost its biggest sugar market in the United States after the Communist Revolution.
  (*c*) rotation of crops was found necessary to maintain the fertility of its soil
  (*d*) mechanization of agriculture made it imperative to grow a variety of crops.
  (*e*) introduction of collective farming is not conducive to single crop commercial farming

4 Give a brief account of Mexican agriculture pointing out its special problems and efforts to overcome them. State how it is different from agriculture in Anglo-America.

5. Give an account of people and their distribution in Central America Explain why certain areas are densely peopled and others very thinly populated.

6. Write an account of the Panama Canal with reference to its construction, special features and the geographical and commercial significance.

Finding Out

7. Collect information on the old and medieval civilizations of Mexico Do you think that these people had at some stage contacts with the rest of the world ?

Cartographic Work

8. In an outline map show the agricultural crops and minerals in Mexico, Central America and the West Indies.

9 Draw a cross section of the Panama Canal showing the locks on the same. Write a note explaining how they work.

Picture Reading

10. Study picture No 21 carefully and state how this region is different from the Great Central Plains of North America in regard to relief, topography, vegetation, climate and history of its people.

Films Available

(*i*) Land of Mexico No 917.2, 11 mins; English, D T A
(*ii*) Central America. No. 917.28, 11 mins; English, D.T A.
(*iii*) Panama . Crossroads of the Western World. No. 918 62, 10 mins; English, D T A
(*iv*) West Indies No. 917.29, 11 mins, English, D T.A.

Further Readings

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UNIT TWO

Europe

GEOGRAPHICALLY, Europe is but an extension of Asia. At best, it is one of the big peninsulas of Eurasia. But the importance of Europe does not lie in its size

Europe occupies a central position in the Land Hemisphere It commands a favoured location in respect of the 'Old World' and the 'New World'—which it has discovered and peopled Culturally, it extends deep into the "New" as well as the "Old" World.

A continent of plains and mountains, Europe has the highest proportion of arable land Its mountains contain some of the most productive forest and pasture lands.

With numerous indentations Europe possesses the longest coastline for its size This has blessed it with numerous natural harbours, making its people one of the best seamen, fishers and traders.

Its mineral and power resources are both varied and abundant. It is rich in coal and iron; and the paucity of mineral oil is compensated for by the abundance of water-power.

Europe is the most densely peopled continent of the world. With only 7 per cent of the land area it sustains as much as 19 per cent of the world population, enjoying generally a very high standard of living. The density of population of Europe, excluding the Soviet Union, is nearly four times the world average.

On scientific and intensive agriculture rests the foundation of industrial Europe European agriculture is characterized with very high yields per hectare.

Europe (excluding the European portion of the Soviet Union) is one of the leading producers of wheat, rye and barley. The same is true of potatoes and sugar beets. It occupies a very high position in the production of meat, fish and poultry, besides milk and other dairy products

Europe (excluding the European portion of the Soviet Union) still leads the other continents in the production of coal, lignite, pig-iron and crude steel. Its metallurgical and machine building industries are one of the best in the world; so are its chemical, electrical and textile industries. It is still the world's leader in international trade.

Europe is the cradle of western civilization. It was here that the Industrial and Agricultural Revolutions took place before they engulfed the whole world. Its system *of law and administration, political institutions, its science, industry and technology, its art and literature have all invaded almost every part of the world today.*

In the pages that follow you may like to seek answers to some of your questions such as: What enabled Europe to be the first in bringing about the Industrial Revolution ? In spite of its very small size what makes Europe to be the important continent ? Why does Europe enjoy a very mild climate for its latitudes? What is the secret of Europe's maritime traditions ? How is it that small and mountainous countries like Sweden and Switzerland enjoy very high standards of living ? What is the secret of very high yields per hectare of agricultural produce in Europe ?

CHAPTER 6

The Continent of Europe

SITUATED between 36°N and 71°8′N latitude and 10°W and about 65°E longitude, the European mainland occupies the western portion of the Eurasian continent. Europe occupies a favoured location as it lies at the centre of the Land Hemisphere.

The southernmost latitude of the European mainland is about the same as that of the northernmost latitude touching the Aksai Chin area of India along its northern frontiers

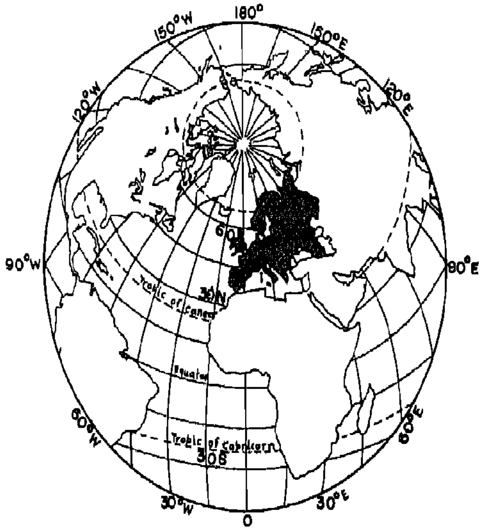


Fig. 42. Europe in the Land Hemisphere

Note the location of Europe at the centre of the Land Hemisphere State three ways in which Europe has benefited from its location in respect of the New and the Old Worlds

With approximately 10 million square kilometres of the total area, Europe including the portion of the Soviet Union west of the Urals, is thrice as large as India It is nearly two-ninths of Asia Europe exclusive of the Soviet Union is just half this size.

Europe is bounded by the Arctic Ocean on the north, the Atlantic on the west and the Mediterranean Sea on the south It has, however, no well-defined boundary on the east.

In the south-west it is separated from the African land mass by a narrow stretch of waters, known as the Strait of Gibraltar. Look at the map and note similar straits in the south-east which partly separate it from Turkey in Asia. The Black Sea, the Caucasus Mountains and the Caspian Sea demarcate its boundary further east. Its conventional boundary with Asia is formed by the Ural Mountains and by a river of the same nomenclature.

Europe is deeply penetrated by seas There is no other continent, the major part of which is exposed to so much of oceanic influence. No part of Europe excluding the Soviet Union is really far away from tidal waters.

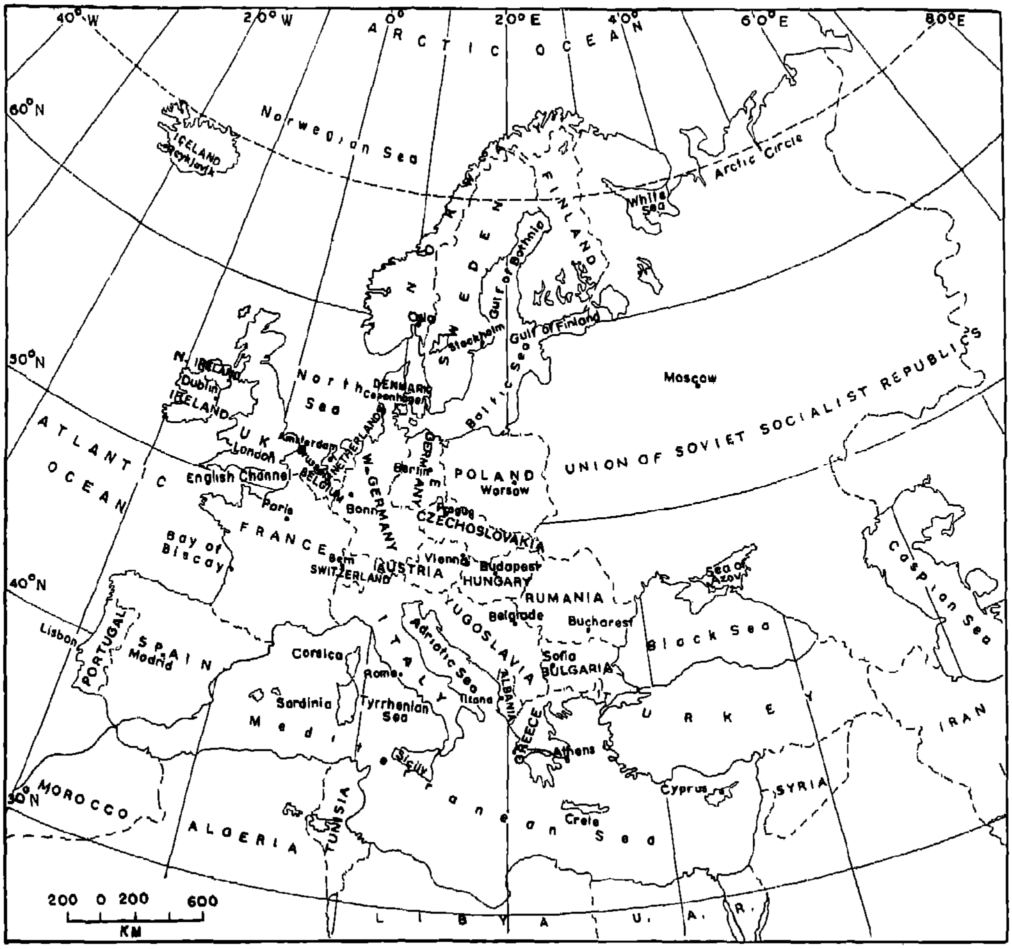


Fig. 43. Europe—Political Divisions

Note how Europe is divided into a number of political units. Compare some of these with a few Indian States in respect of their size. Name four landlocked countries of Europe.

With such a highly broken and indented coastline, Europe possesses the longest coastline for its size. Its long coastline studded with natural harbours and the existence of productive fisheries in its vicinity have together made the people of Europe one of the most sea-faring The great European seamen were responsible for the discovery of the New World as well as Australia and New Zealand. No wonder then, if Europe is still in the forefront of international trade, commerce and shipping.

Relief

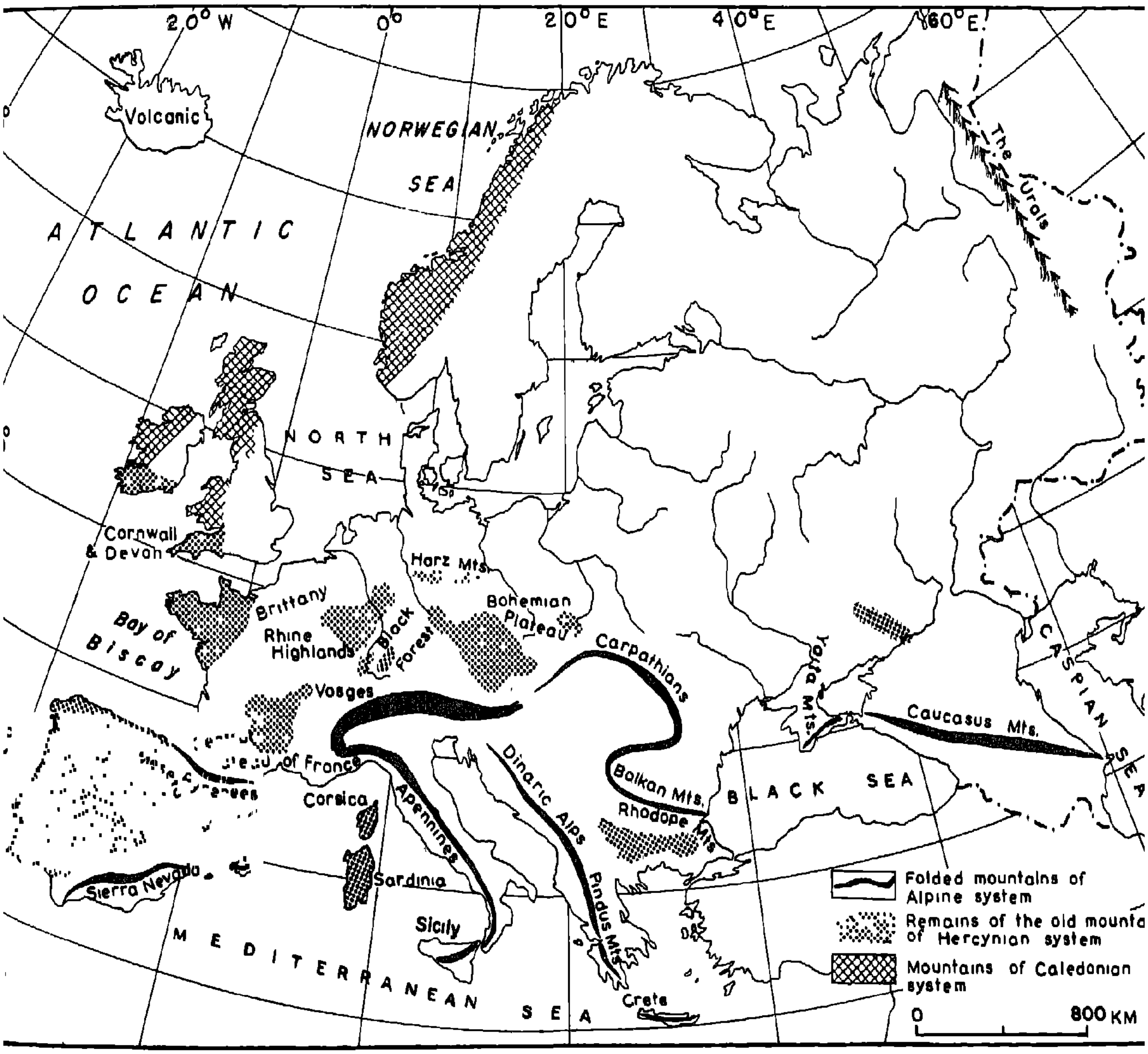
Europe is a land of plains and mountains. The mountains which form the backbone of the continent belong to three distinct geological periods—the Caledonian, the Hercynian and the Alpine, in order of their age.

The Caledonian System of Mountains is the oldest in Europe and its remnants are found in Scandinavia, and in British Isles, especially in the Scottish Highlands, Wales and in north-western Ireland. These mountains have been subjected to prolonged weathering. Whereas the plateaus have gentle slopes, the fiords are deeply cut with steep or nearly vertical walls on either side. The mountains which were highly glaciated are in general barren and inhospitable.

The Hercynian System of Mountains lies further south. The remnants of the system are scattered in a belt stretching from Brittany in the west to the western end of the Carpathians in the east. The Central Massif of France, the Vosges, the Black Forests, and the Plateau of Bohemia are some of the old mountain

Fig. 44. Europe—The Mountain Systems

Note the three distinct mountain systems of Europe from north to south. Which mountains form the major watershed of Europe ?



blocks of Europe. These mountain blocks are invariably forested to the top and even cultivated to their summits. Their maximum height does not exceed 1,600 metres, and they are fairly well peopled as against the northern Caledonian mountains

The Alpine System of the Folded Mountains is the youngest of all They are the highest mountains of Europe with Mont Blanc as the highest peak 4,807 metres above sea level. In age, formation and magnificence they are comparable to the Himalayan mountain system of India Besides the Alps proper the prominent mountains in this system are the Pyrenees, the Apennines, the Dinaric Alps, the Carpathians, and the Caucasus

The Lowlands of Europe are one of the most densely peopled parts of the world The most impressive and dominant is the Central or Great European Plain, stretching from the Seine Basin in France on the west to the Urals in the east It includes the Paris Basin of France, the Low Countries, the northern lowlands of Germany and the Russian platform The plain goes on widening in the east till it touches the White Sea on the north and the Black Sea in the south.

In southern Europe the Plain of Lombardy in Italy consists of alluvial deposits very much like those of the Ganga Plain. The lowland of Andalusia in Spain is another alluvial plain As against these two, the Hungarian Basin is of a lacustrine origin, that is, it was a bed of a big lake, long long ago

The Great European Plain is underlain by old rocks, at places covered with recent deposits. Its landscape is considerably influenced by glaciation. In former times large parts of northern Europe were covered with ice-sheets, similar to the ones that now exist over Greenland and Antarctica. The period during which such continental ice-caps or sheets existed is known as the Ice Age. It is estimated that the maximum height of the ice during the Ice Age was well over 2,000 metres. The limits of the ice-caps kept on advancing and receding according to gradual but marked changes in climate The last continental ice-sheet lying over northern and central Europe seems to have disappeared some 10,000 years ago. The small but innumerable lakes, morainic ridges and glacial deposits of today are the remnants or the scars left by the retreating ice-sheets of the Ice Age

As a result of glaciation the surface soils were carried away from some places by the glaciers and redeposited elsewhere These deposits varied both in the thickness of their layers and in the fineness of their texture. The lands consisting of deep glacial deposits of fine texture are fertile, whereas the shallow deposits of sand and gravel render them infertile

Lakes of glacial origin generally serve as natural reservoirs of water and are often harnessed for the development of hydro-electricity The hanging valleys which are generally tributary to the main U-shaped valleys provide a natural head of water for the purpose

There are many rivers in Europe They can be grouped according to the sea into which they fall. The rivers flowing northwards into the Bay of Biscay, the English Channel, the North Sea and the Baltic are the Garonne, the Loire, the Seine all from France; the Rhine and the Elbe in Germany, the Oder and the Vistula in Poland. Of these rivers the Rhine is the busiest and the most important waterway of Europe.

The Danube falling into the Black Sea is yet another important river, especially so in south-eastern Europe

The rivers flowing towards the south into the Mediterranean are the Ebro, the Rhone, and the Po The alluvial plain of the Po is agriculturally the most important part in the Mediterranean region

Among the Russian rivers the Dnieper, the Don, the Volga, and the Ural are important Note the seas into which each one of them drains

Climate

Although the continent of Europe lies almost entirely in the temperate zone, its climates are

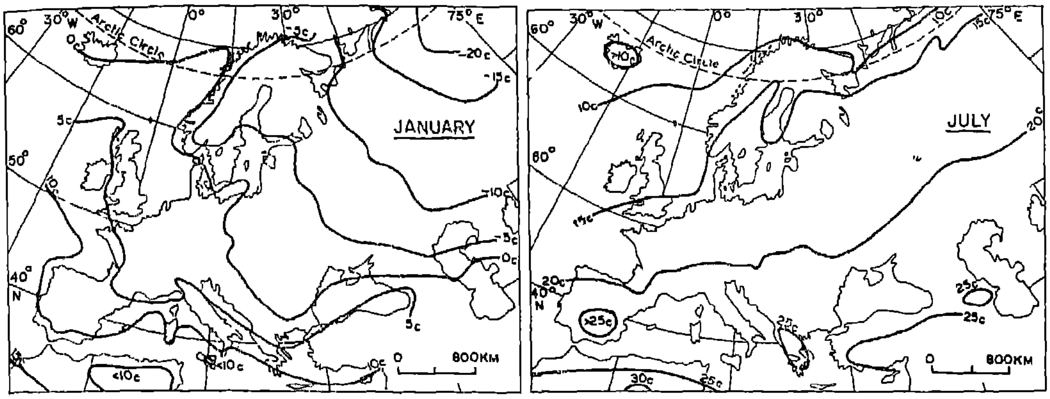


Fig. 45. Europe—January and July Isotherms

Compare the trends of isotherms during the two seasons How will you account for the marked difference in their trends in the two seasons ?

varied The most important factors governing the European climates are the warm North Atlantic Drift, the prevailing westerlies, and an extremely broken shape of the continent deeply penetrated by the arms of the seas.

Temperature—In winter the warm moisture-laden westerlies have a warming effect on the climate of Europe, especially in its western part. This influence gradually weakens eastwards as the westerlies are not able to penetrate deep into the continent, over which develops a high pressure area.

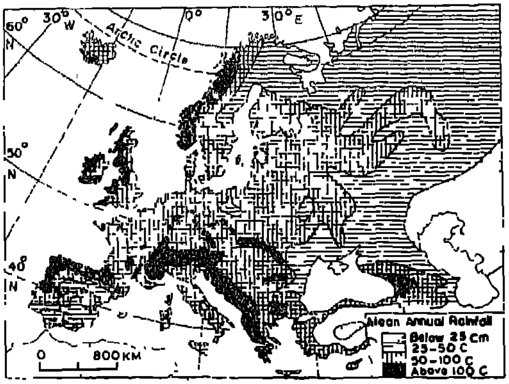
If one proceeds from west to east along the same parallel of latitude, there is a gradual fall in the mean January temperature. Whereas at Waterford in Ireland the mean January temperature is 6°C, at Kursk in the Soviet Union it is as low as —8°C In summer, on the other hand, the mean July temperature goes on increasing as one proceeds eastwards. Whereas the temperature at Waterford is 15°C, at Kursk it is 21°C.

Thus in the interior of eastern Europe, a place like Kursk experiences a marked continental type of climate where the annual range between the mean temperatures is as wide as 29°C as against only 9°C at Waterford in Ireland. The temperature also decreases from south to north in summer and from south-west to north-east in winter.

Precipitation—The rainiest parts of Europe are along its ocean front and the windward slopes of the mountains along the coast For example, the western slopes of the mountains in Norway and the Scottish Highlands receive very heavy rains. The western depressions move eastwards into the land carrying rain with them These winds or depressions are not hindered by any mountains as the high mountains of central Europe also run in an east-west direction. It is, however, the high pressure area developed over eastern Europe that checks their eastward march in winter. In spring and summer they are

Fig. 46. Europe—Distribution of Annual Rainfall

Compare this map with that of relief and find out the correlation between heavy rainfall, high relief and trends of mountain ranges.



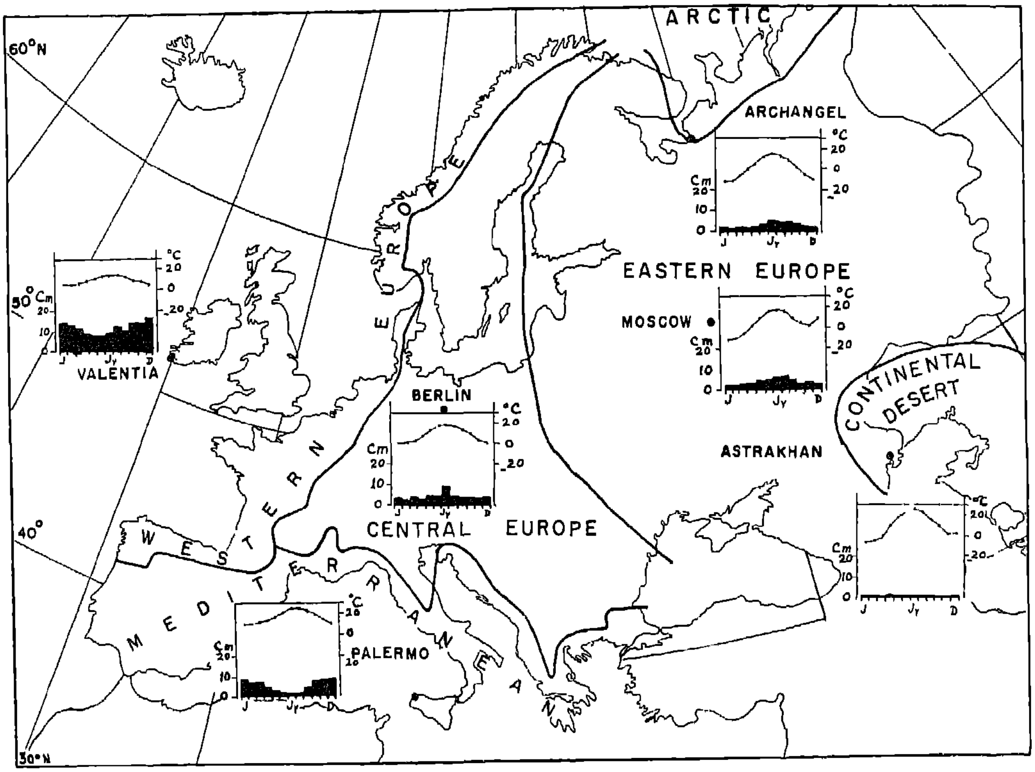


Fig. 47. Europe—The Climatic Types

Remember that the transition from one climatic zone to another is gradual. Study carefully the rainfall and temperature graphs for each type of climatic zone. Compare the East European type, the West European type and the Mediterranean type of climates with the help of temperature and rainfall graphs How do they differ from one another in respect of their rainfall regimes ?

able to penetrate deep into eastern Europe because of the existence of low pressure over there. Only the extreme south-eastern Europe near the Caspian Sea experiences a somewhat desert type of climate

Europe north of the Alps depends upon the westerlies for moisture and warmth, whereas south of the Alps relies upon the Mediterranean. The rainfall regime in this region is influenced by the shifting of the subtropical high pressure belt in sympathy with the apparent migration of the sun. In summer when this high pressure belt shifts northwards, covering the Mediterranean region, it experiences drought conditions because of off-shore winds. In winter when the high pressure belt shifts to the south, the prevailing westerlies bring rains to this region.

Six types of climates are found in Europe. They are: (*i*) the Arctic type, (*ii*) the West European type, (*iii*) the Central European type, (*iv*) the East European type, (*v*) the Mediterranean type and (*vi*) the Continental Desert type.

The Arctic type of climate in Europe is found in its extreme north. It has brief but warm summers and prolonged and severe winters. The rain is concentrated mostly in summer months Ground remains covered with winter snow, well over five months.

The West European type of climate is found along the north-western ocean front It is characterized by warm summers and cool winters. The range of temperature is moderate. This climatic region is a land of much cloud, abundant rain evenly distributed throughout the year, and a few brief spells of frosts.

The Central European type of climate is a transition between West European type and the East European type. It is marked with warmer summers and cooler winters as compared to those of western Europe. It is, however, free from the extremes of the east European type of climate, but winter frosts are not uncommon.

The East European type of climate is characteristic of continental interiors that are inaccessible to the oceanic influence. Summers are warm and winters very severe. There is a very considerable range of temperature. Common and prolonged are the winter frosts. Rainfall is low and is concentrated mainly in summer.

The Mediterranean type of climate is found around the Mediterranean Sea. Summers are hot and dry, and winters wet and mild, with occasional frosts. The eastern Mediterranean type is drier than the western.

The Continental Desert type of climate is found between the Urals and the Caspian Sea. Summers are hot and winters severe. The climate is characterized by its aridity, that is, deficiency of rainfall.

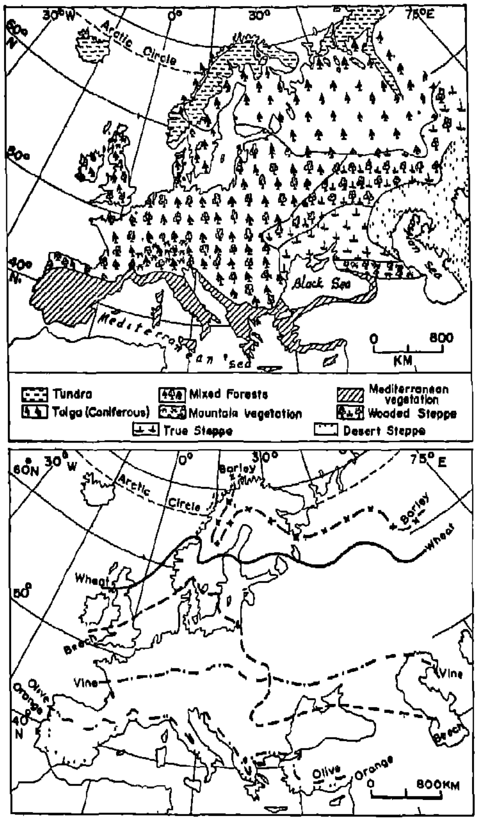


Fig. 48. Europe—Vegetation Belts and the Northern Limits of certain Plants and Trees

Note the vegetation zones and northern limits of some trees and plants in Europe. How do relief and the distance from the sea affect the nature and distribution of vegetation ?

Natural Vegetation and Soils

Europe is divided into a number of vegetation belts: the tundra, the taiga, the mixed forests, the Mediterranean and the grasslands.

The **tundra zone** is a cold, treeless belt lying mostly in the Arctic Circle. It, however, extends southwards along the Scandinavian and the Ural Mountains. This belt is often called the "Arctic Steppe" with moss, lichen and stunted willows in sheltered hollows. For a few weeks in July it is a land of wild but beautiful flowers. Even this inhospitable land is an abode of a few lemmings, reindeer, Arctic hares, and migrant birds. Moreover, the Polar bears, wolves, and Arctic foxes, are not uncommon.

The soil is frozen for a greater part of the year; and the subsoil is permanently frozen. As a result, only the shallow-rooted plants can grow in this region.

The **taiga** which denotes the northern coniferous forests lies to the south of the tundra. The transition between the tundra and the taiga is gradual as willows give place to birches and they in turn are succeeded by stunted conifers. The major coniferous species are spruce, pines, larch and fir. These species form the commercial evergreen forests of northern Europe. The wild life consists of the fur-bearing animals such as the lynx, sable, squirrel, otter and ermine.

The soils are ash-grey in colour and are known as *podzols*. Their top layer is heavily leached by the melting of deep snow cover. The surface soil is shallow, acidic and poor in humus.

The **mixed forests zone** lies further south but in the east the taiga forest gives place to steppe type of vegetation. This reflects the aridity of the region as it is far away from the oceanic influence. In this belt of mixed forests predominate the broad-leaved deciduous trees, such as oak, beech, elm, ash and lime These are hardwood trees. The forests are now found only in hilly and inaccessible areas. The coniferous trees are generally confined to poor, sandy soils found in mountainous districts.

The brown forest soil is predominant in this belt It is less acidic and contains higher proportion of humus.

The **Mediterranean zone** of vegetation is confined to southern Europe along the Mediterranean Sea. The trees of the region have to stand long summer drought, and hence they have small leaves, deep roots and low stature. As the period of growth of these evergreen trees is less than five months, their leaves are often thick and oily. Some of the trees are thorny; others have thick and pulpy barks. Through these natural devices the evaporation of moisture is kept to a minimum. Olive, holm oak, cork oak, stone pine are the common trees. A variety of shrubs are found in this belt. It is a region known for fruit trees such as the olive, fig, grape and orange.

The brown forest soil is characteristic of the region. At places there is fertile red soil known as *terra rosa*, where underlying rock is calcareous.

The **steppe grasslands** are found north of the Black Sea. They are generally divided into wooded steppe, true steppe and desert steppe, depending upon the amount of precipitation.

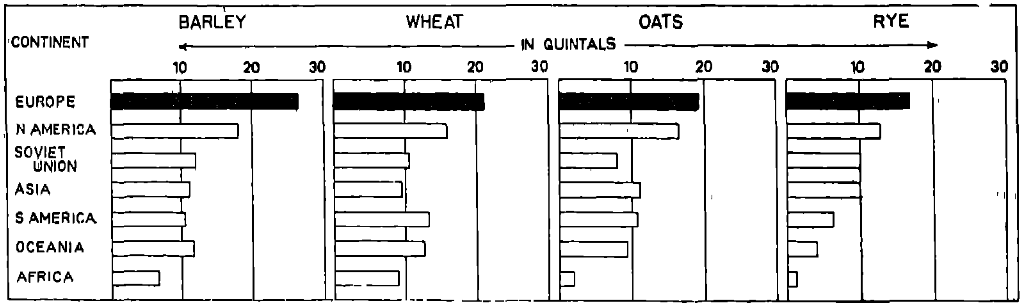
The black earth or *chernozem* is the most characteristic soil of the true steppe region. It is a deep, black soil, highly fertile and easy to work as it crumbles very easily. The desert steppe has chestnut soil, so named after its colour. It does well under irrigation.

Agriculture

With large, level and well-watered plains, Europe occupies an important position in world agriculture. Nearly 31 per cent of its total land area is under cultivation; and about 30 per cent of its active population still engaged in agriculture. This fact, together with very high yields per hectare, makes Europe well-known for its intensive agriculture carried on scientific lines.

Fig. 49. Comparative yields per hectare of Europe's Leading Cereals (1964)

Note that the yields of barley, wheat, oats and rye per unit area are the highest in Europe. Why are the yields of these crops very low in Africa ? To what extent is climate responsible for this marked variation ?



Among the cereals it is the leading producer of barley and rye, the major cereal crops of cool, moist temperate lands In the production of wheat and oats—major cereals of temperate zones—it stands second next only to the Soviet Union and North America respectively. It also leads in the production of potatoes and sugar-beets—the important cash crops of mid-latitudes. Europe accounts for nearly four-fifths of olives and olive oil and two-thirds of grapes. These are the cash crops of the Mediterranean Europe.

Europe is well-known for its animal rearing, dairying and mixed farming. About 18 per cent of its land area is under permanent meadows and pastures. It rears large number of cattle on its farm where they are fed on nutritious grasses and fodder crops. Pigs are generally reared on sugar-beet tops and skimmed milk. Of its 120 million cattle, 87 million are cows. The average yield of milk per cow is very high in Europe, especially in the countries around the North Sea. For example, in the Netherlands it is as high as 4,230 kilogrammes per cow per annum. The continent also leads in the total production of milk, meat and dairy products. Poultry is yet another very common feature of European agriculture.

With 27 per cent of land under forests, Europe is fairly rich in forest resources. These are mainly confined to Scandinavian and Alpine mountains. Besides forestry, fishing is also very important in Europe. With the fisheries like the Dogger Bank and Great Fisher Bank in its vicinity the continent is responsible for a rich and steady harvest of the sea. With its annual catch of about 10 million tonnes, Europe has the highest per capita consumption of fish.

Mineral and Power Resources

Very extensive are the mineral and power resources of Europe, especially in respect of iron-ore, coal, lignite and water-power. It produces about a quarter of the world's iron-ore and leads in the production of coal and lignite. These together have been responsible for the

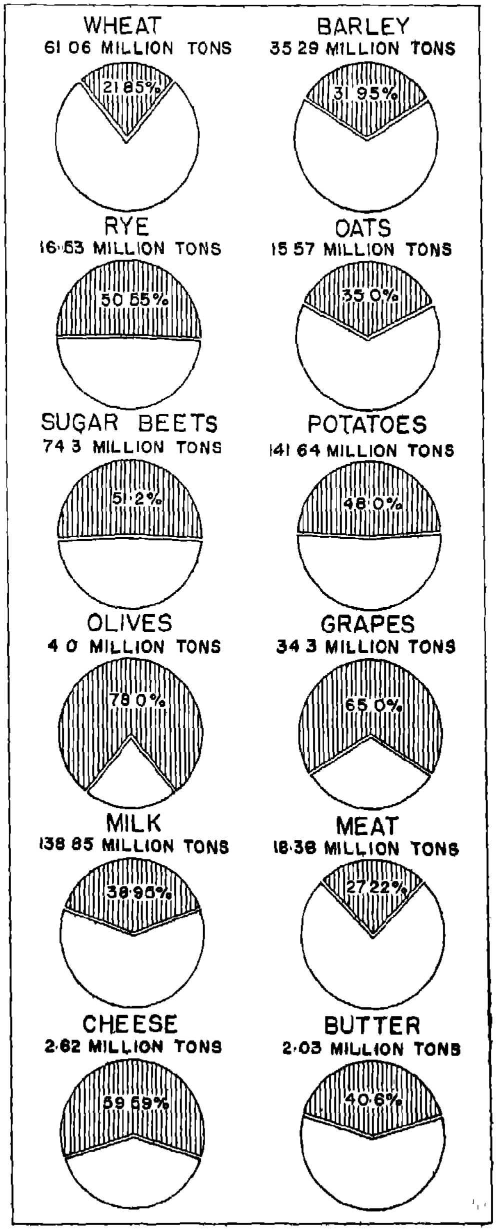


Fig. 50. The Share of Europe in the World Production of some Agricultural Crops and Animal Products (1964)

Note the food grains of Europe. Why does Europe supplement its wheat with barley, rye and oats and not by millets ? In what way is climate responsible for it ? How will you explain the dominant position of Europe in animal products ?

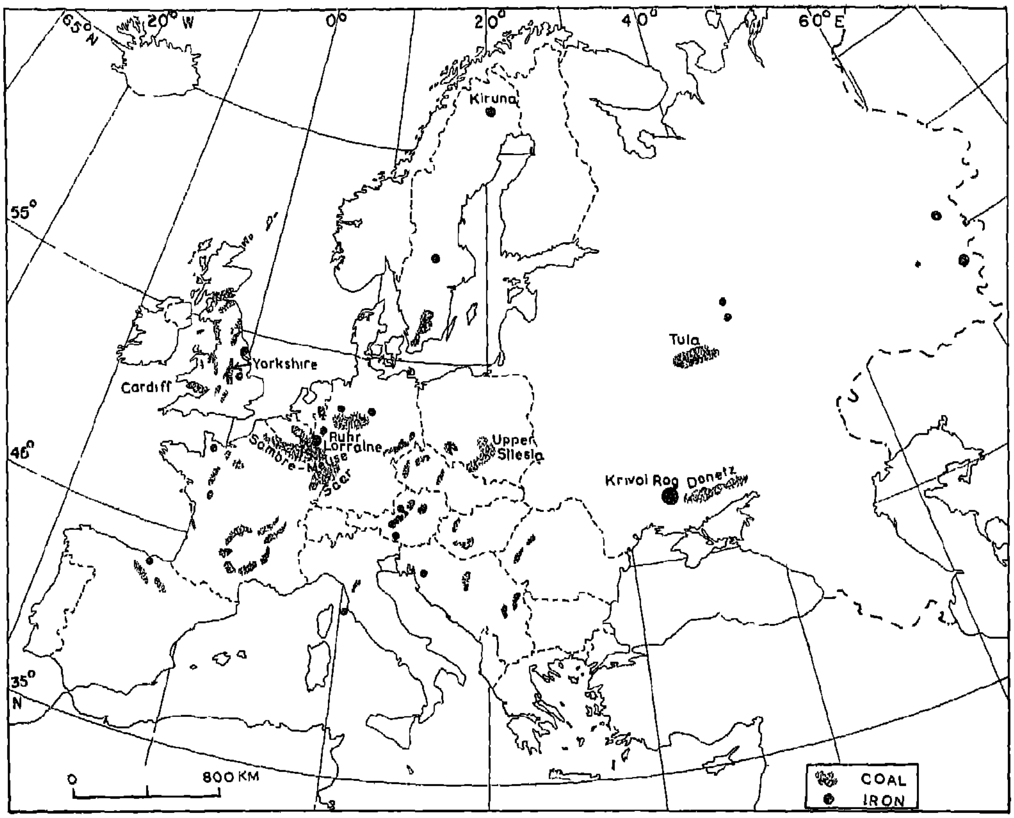


Fig. 51. Europe—Iron mines and Coal-fields

Note the major coal-fields of Europe Study their location in relation to iron-fields. Why is it said that the heart of industrial Europe lies in the Ruhr Valley ?

rapid industrialization of the continent. It now accounts for nearly 30 per cent of the world's total production of electrical energy. In fact, the paucity of mineral oil is largely compensated for by its rich and well-developed water-power resources.

Industries

With huge deposits of coal and iron, Europe has a thriving iron and steel industry. In fact, it has to import iron-ore to maintain a high tempo of its industrial growth. With only a quarter of the world's iron-ore production, it accounts for nearly 30 per cent of the world's annual output of pig-iron and 35 per cent of crude steel.

Besides iron and steel, Europe has several well-developed heavy industries such as ship-building, automobiles and railway equipment. Its machines, tools and precision instruments industry is equally important. In addition, Europe is known for its textile industries—cotton, woollen and synthetic fibres Europe produces electrical and electronic goods as well.

Transport and Population

Europe is perhaps best served by every modern means of transport. It has closest

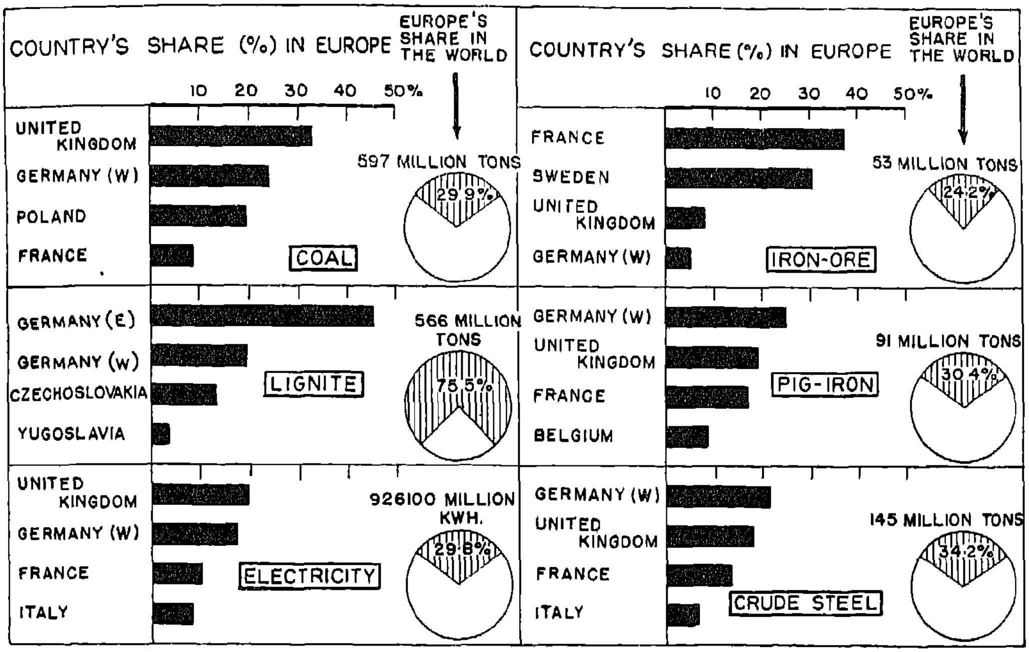


Fig. 52. The Share of Europe in the World Production of Coal, Iron and Electricity (1964)

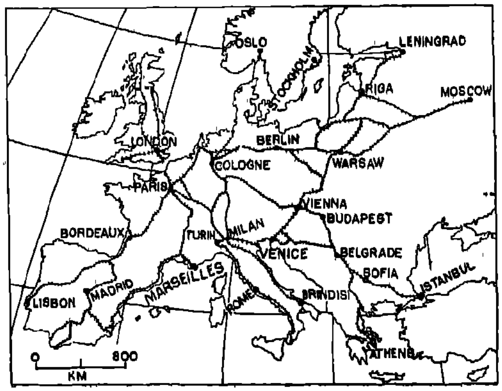
Note that Europe leads other continents in the production of coal, lignite, pig-iron and crude steel. Which countries contribute to the bulk of the Europe's iron and steel manufactures ? Which European countries are most interdependent in their requirements of iron and coal ?

railway network. The important railway junctions are London, Paris, Berlin, Warsaw and Belgrade. Several railway routes cross the Alps—the highest mountain chain of Europe.

Europe is fortunate in being served by an intricate network of inland waterways. Most of its rivers are interconnected by canals. The Rhine is perhaps the busiest inland waterway of the world which serves the highly industrialized parts of Europe in Switzerland, eastern France, West Germany and the Netherlands. The Seine, Thames and Danube are the other important navigable rivers of Europe. Europe is blessed with several natural harbours and busy ports of international trade and commerce. Prominent among these are London, Amsterdam, Hamburg, Bremen, Marseilles and Genoa. Almost all the important towns of Europe are interconnected with regular air services. The most important air-ports of Europe are London, Paris, Frankfurt, Geneva and Rome.

Fig. 53. Europe—Railways

Note the trunk railway routes of Europe. Compare this map with that of relief and find out how far relief has influenced the construction of railways in Europe.



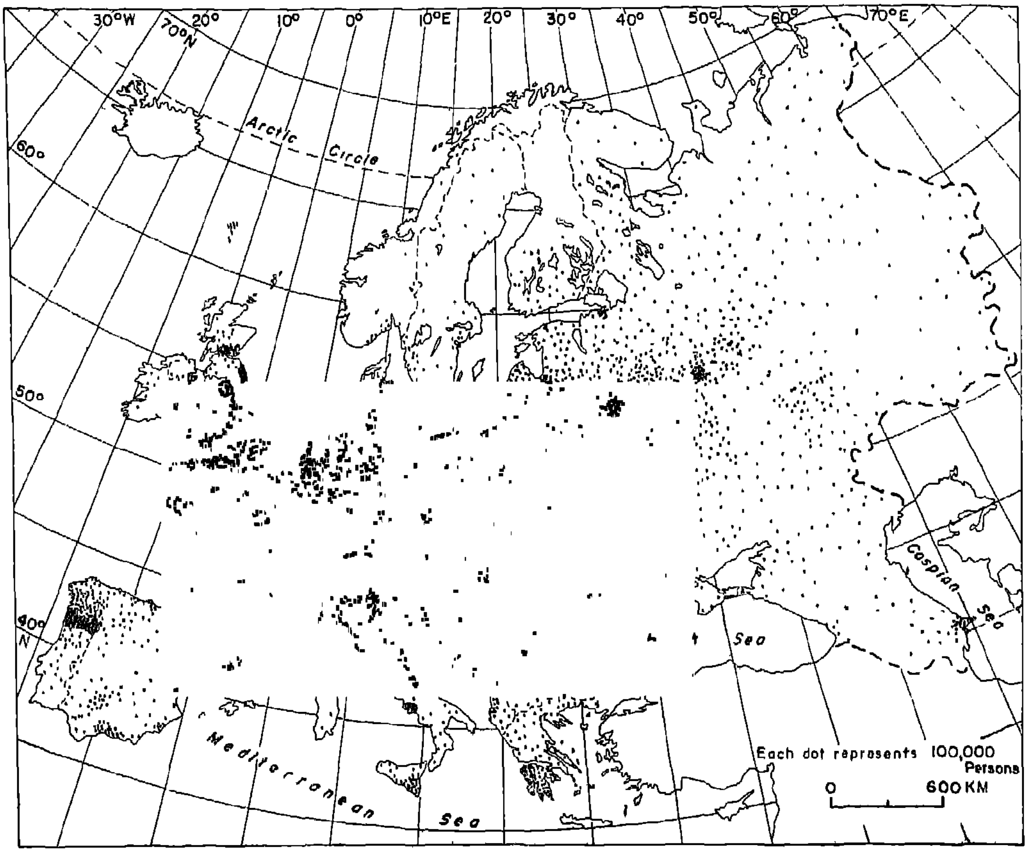


Fig. 54. Europe—Distribution of Population

Note the densely peopled parts of Europe. How will you account for high concentration of population in certain parts of Western Europe ? Compare this map with that of iron and coal-fields in Europe What fact strikes you most ?

With a total population of 441 million in 1964 the average density of Europe (excluding the European portion of the Soviet Union) was 89 persons per square kilometre. Europe is the most densely peopled continent of the world. The proportion of urban population is also the highest in this part of the world. The pattern of population distribution in Europe is influenced not so much by fertility of soil but by its subsoil wealth—especially the coal and iron-ore deposits. The pockets of high concentration of population are generally around the coal-fields and the centres of international commerce.

Europe is divided into geographical divisions in various ways. For our convenience we may divide it for detailed treatment into the following divisions: (*i*) Northern Europe; (*ii*) Oceanic Europe; (*iii*) the Mediterranean Europe; (*iv*) Central Europe and (*v*) South-eastern Europe.

EXERCISES

Review Questions

1. Answer the following questions briefly:
    - (*i*) Name the four geographical factors that condition the climates of Europe.
    - (*ii*) Which are the rainiest parts of Europe and why ?
    - (*iii*) In what two cereals does Europe lead other continents ?
    - (*iv*) Which are the two most important power resources of Europe ?
2. Give reasons :
    - (*i*) No other continent is exposed to oceanic influence as Europe is.
    - (*ii*) Europe is still in the forefront of international trade, commerce and shipping.
    - (*iii*) Europe is a continent that has the highest density of population.
    - (*iv*) Europe has the largest per capita consumption of fish
3. Complete each of the following statements with the most appropriate ending:
    - (A) The Rhine is the busiest waterway of Europe because
        - (*a*) it attracts a huge tourist traffic as it flows through the most beautiful landscape.
        - (*b*) it serves a highly industrialized region by carrying raw materials and finished products.
        - (*c*) it is the only outlet for a highly industrialized and a landlocked country, namely Switzerland.
        - (*d*) it encounters no barriers of customs and trans-shipments etc.
        - (*e*) it passes through the most fertile agricultural land of Europe.
    - (B) The Ruhr Valley is the heart of industrial Europe because
        - (*a*) it possesses rich coal deposits
        - (*b*) it occupies a central position in Europe.
        - (*c*) it is a big hub of transport
        - (*d*) it produces crops needed to run the industries.
4. Give an account of climates in Europe Trace the effects of climate on vegetation and soil in each zone.
5. Describe the salient features of agriculture in Europe. What place does animal husbandry occupy in European agriculture ?
6. State the salient features of population distribution of Europe. State four factors influencing the population distribution in order of their importance.
7. Write a brief account of rail and water transport system of Europe. Show how it is closely related to its industries and trade.

Finding Out

8. Find out all that you can about the efforts of the West European countries to come closer to one another in the direction of establishing European Economic Community.

Cartographic Work

9. In an outline map show the iron and coal deposits of Europe. Also draw a cartogram showing production of coal, pig-iron and steel of the six leading countries of Europe in this regard.

Picture Reading

10. Look at the mountains in pictures No. 24, 39 and 53. Name the three distinct mountain systems they belong to. Compare the features of these mountains with one another and state how these mountains differ from one another. Finally arrange them according to their age.

Films Available

(*i*) Age of Discovery. No. 914 6; 11 mins; English; D.T A.
(*ii*) The Growth of London. No. 914.2; 23 mins; English; D.T.A.
(*iii*) In and Around Amsterdam. No 914.82; 10 mins; English; D.T.A.
(*iv*) La Parole est au Fleuve (Along the Rhine) J-22; 24 mins; English; F.E.C.C.
(*v*) The Renaissance No. 940.21; 11 mins; English; D.T.A.
(*vi*) Tourisme Alpin. No. J-3; 20 mins; English; F.E.C.C.

Further Readings

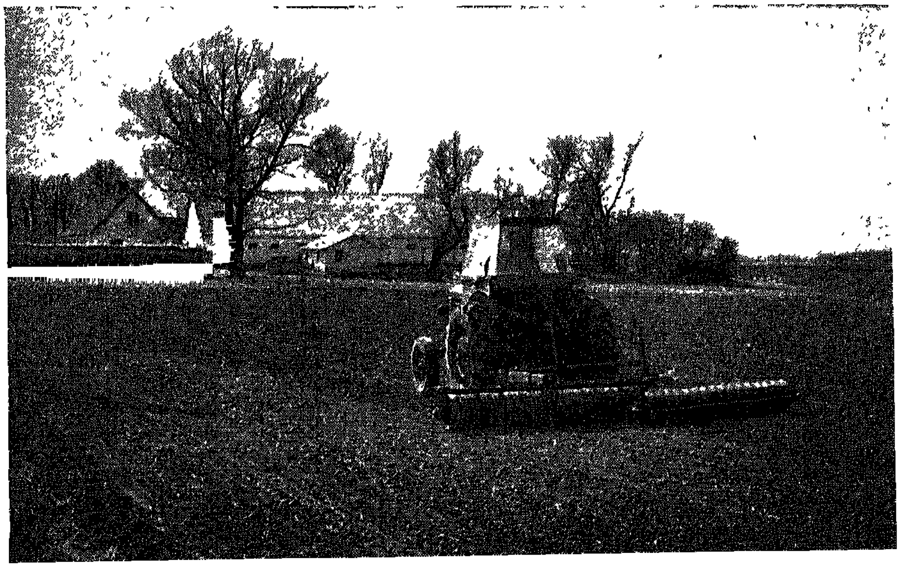
Branigan, J. J., *Europe.* (The New Certificate Geography Series, Advanced Level.) Macdonald and Evans, London, 1966, Pp. 1-59.
Branigan, J. J., *Europe and the Soviet Union.* (The New Certificate Geography Series, Ordinary Level.) Macdonald and Evans, London, 1966, Pp 1-18.
Preece, D. M. and Wood, H. R. B., *Europe.* University Tutorial Press, London, 1964, Pp. 1-35.
*Shackleton, M. R., *Europe : A Regional Geography.* Longmans Green and Co., London, 1965, Pp. 1-50.
Unstead, J. F., *Europe.* University of London Press, London, 1964, Pp. 1-95

33. Northern Finland, the Skier's Paradise *(Courtesy: Embassy of Finland, New Delhi)*

Snow cover in Finland lasts over 90 days in south and to 250 days in north. It is generally deepest in March when it averages about 60 centimetres. Note the long wooden skis attached to the shoes. What kind of sport is skiing?

34. A Danish Farmer at Work *(Courtesy: Embassy of Denmark, New Delhi)*

Note how carefully a Danish farmer prepares his field, with the help of small machines. Note the leafless trees. What season is it ? Why is Denmark called a country of poor soils but high yields ?

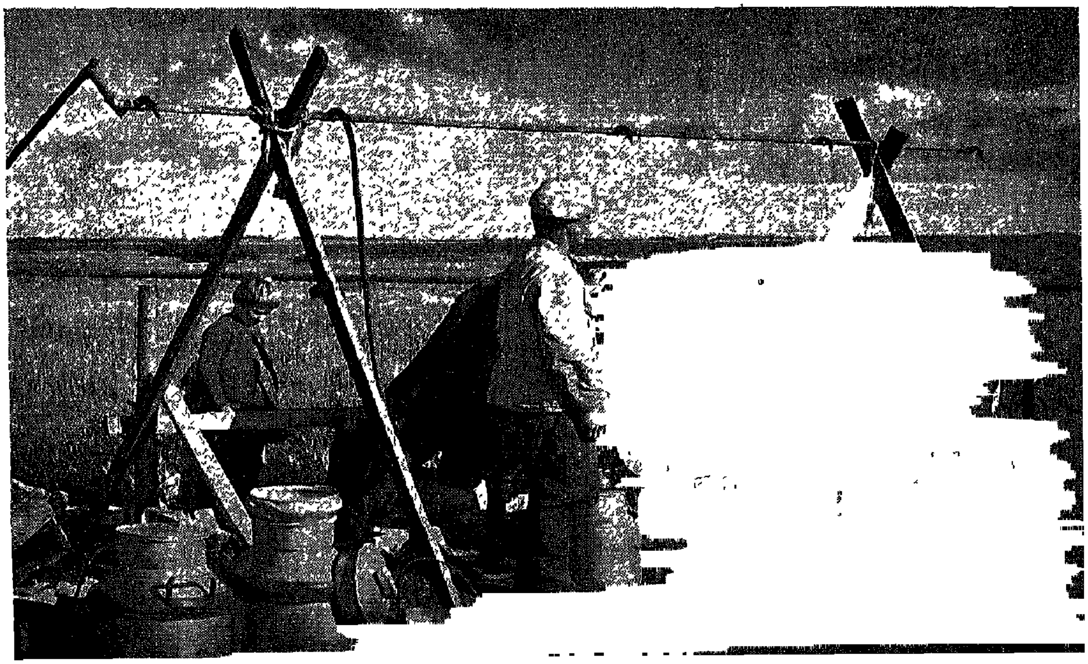


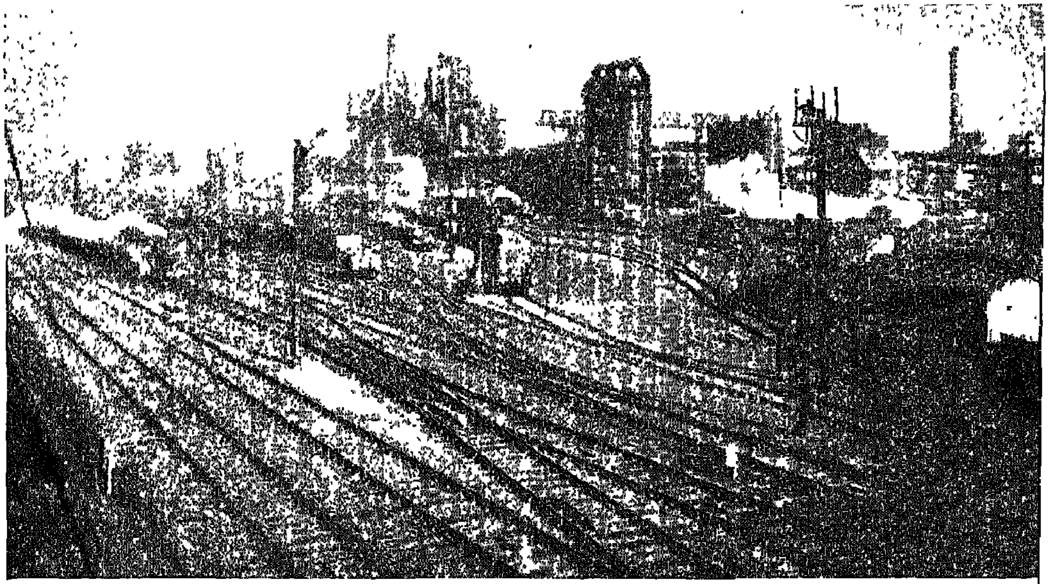
35. A Fleet of Fishing Drifters in the Dogger Bank *(Courtesy: British Information Service, New Delhi)*

The Dogger Bank is the most productive fishing ground of Europe. Nearly a million tonnes of fish are landed in the ports of the United Kingdom every year. Annually fish worth 6 million sterlings are exported from the country. Why is fishing an important industry of the United Kingdom?

36. Dairying in Denmark *(Courtesy: Embassy of Denmark, New Delhi)*

On an average a milking cow of Denmark yields 4,300 kilogrammes of milk and 180 kilogrammes of butter every year. What is the secret of this great success ?



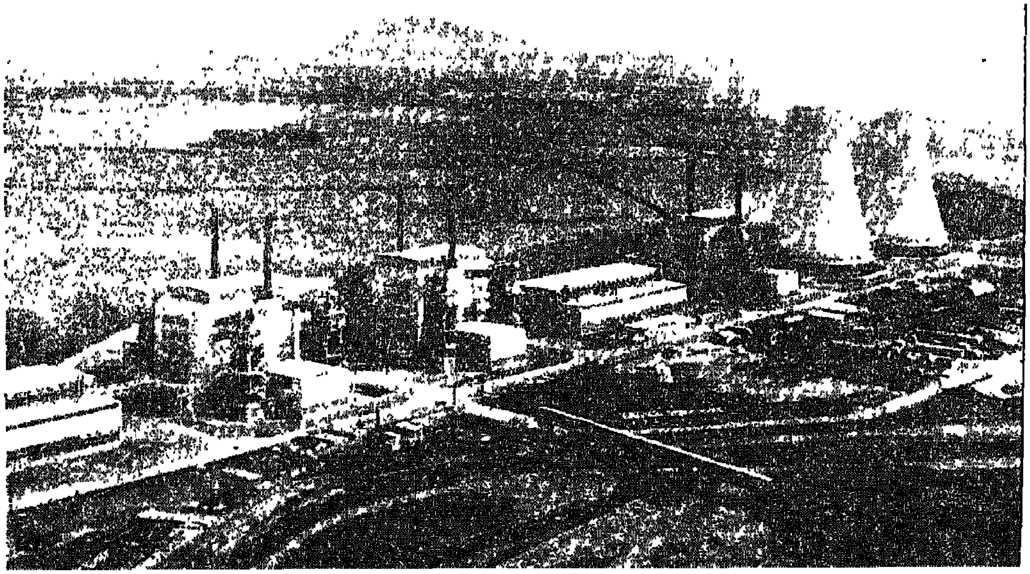


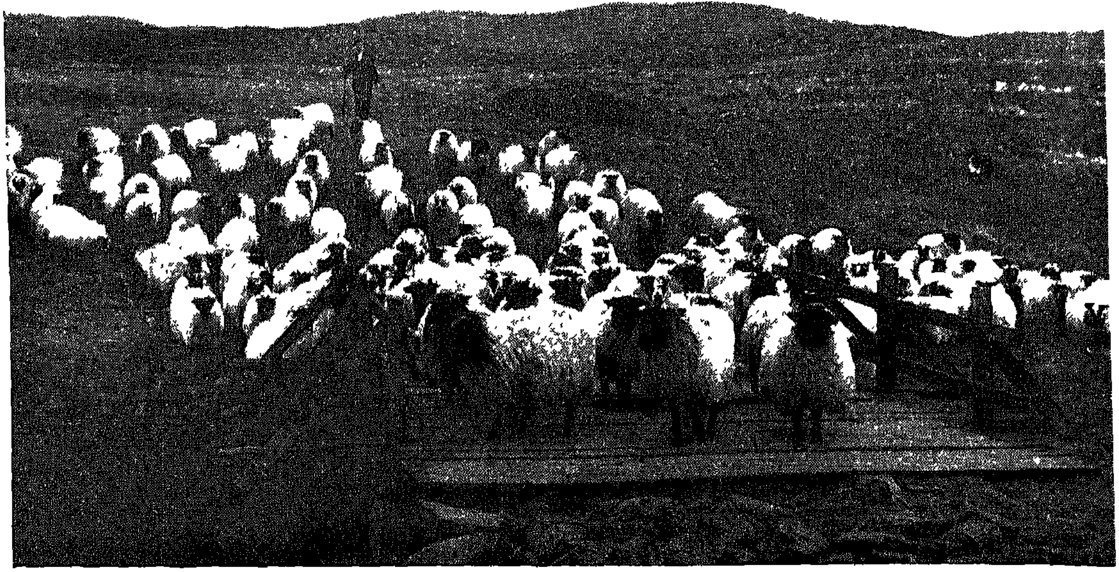
37. An Iron and Steel Plant in the United Kingdom *(Courtesy: British Information Service, New Delhi)*

This is an exterior view of a blast furnace at Corby The country is still one of the important producers of pig-iron and crude steel. Why is such a big railyard necessary close to the blast furnace?

38. An Atomic Power Station in the United Kingdom *(Courtesy: British Information Service, New Delhi)*

The United Kingdom is one of the pioneers in the field of atomic energy plants. It has now several plants like the one in this picture. Why has this country switched over to atomic energy on a fairly big scale ?



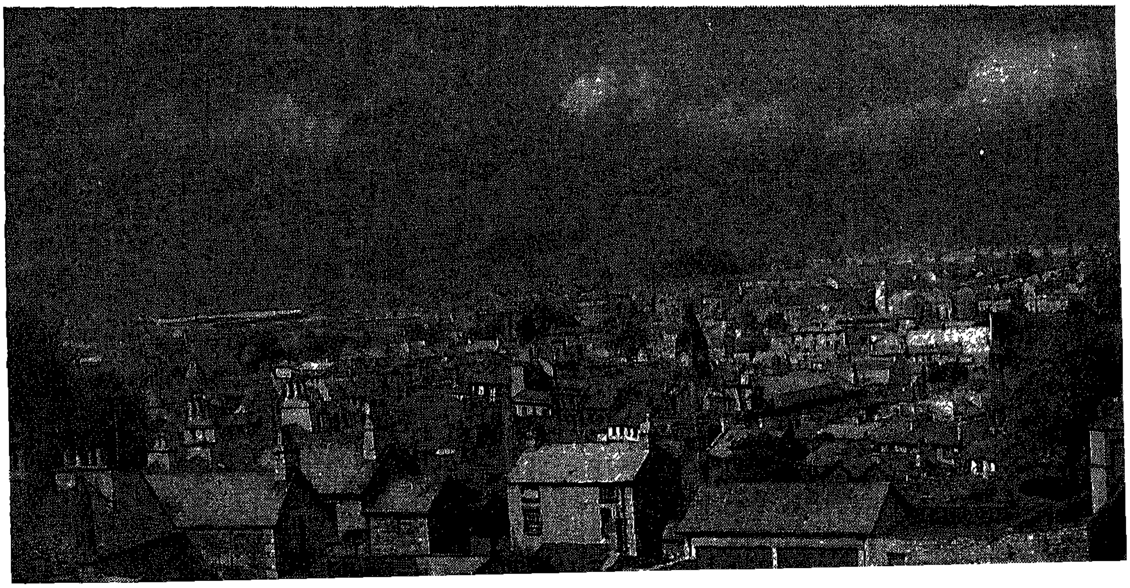


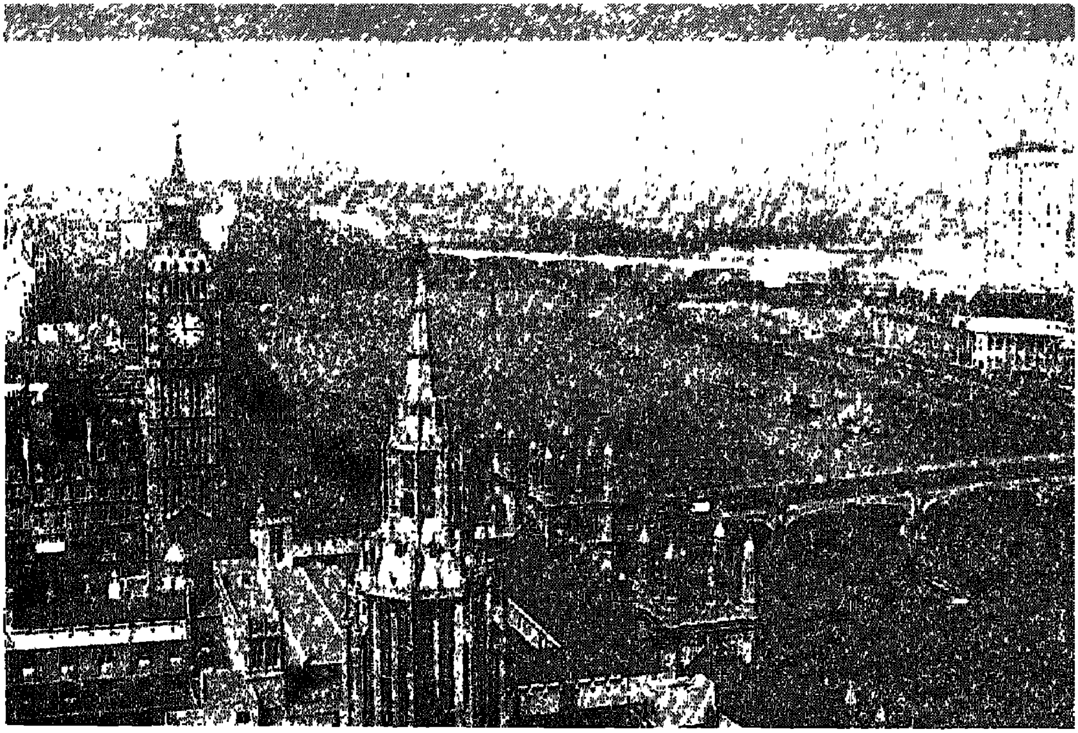
39. A Flock of Sheep in the Scottish Highlands *(Courtesy: British Information Service, New Delhi)*

A shepherd in the picture is driving a flock of sheep to the warmer south for the winter. The country has nearly 30 million sheep and produces 58,000 tonnes raw wool a year, standing first in Europe Note the nature of terrain. Can it be put to any better use?

40. A Market Town in the Lake District of England *(Courtesy: British Information Service, New Delhi*

This market town is a small manufacturing centre. It produces woollens, hosiery, footwear, paper and agricultural implements. Note the landscape of the region. What makes this district an attraction for the tourists?



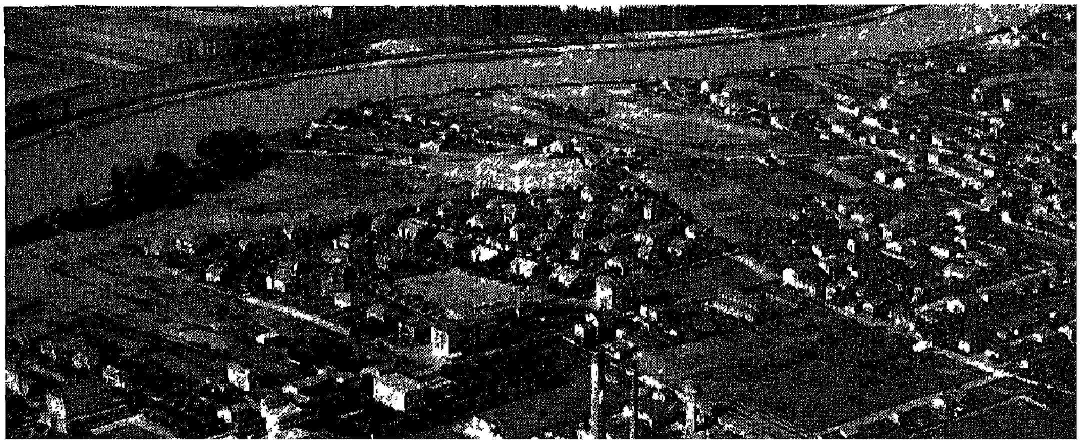


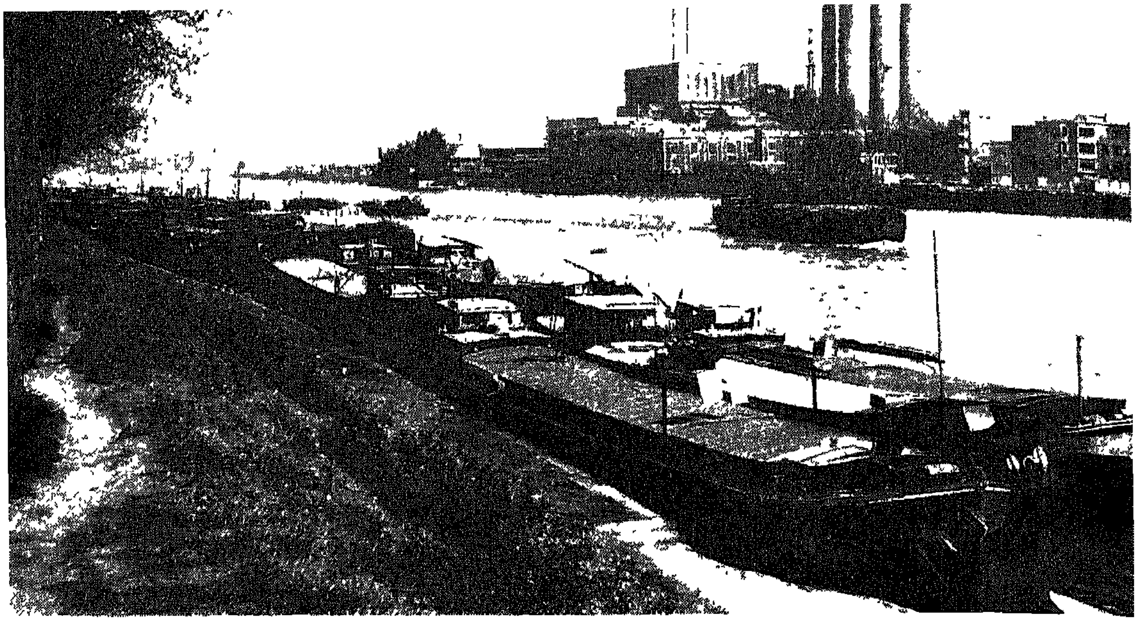
41. The Old and the New in London *(Courtesy: British Information Service, New Delhi)*

In the foreground are the Victoria Tower, the roofs of the Houses of Parliament and the Clock Tower, Big Ben To the right is a new multi-storeyed Shell Building. Across the river are three bridges· Westminster, a Railway Bridge and Waterloo. Can you name the river?

42. Textile Mills at Lyons, France *(Courtesy: Embassy of France, New Delhi)*

Lyons in the Rhone basin is an old silk centre Now it manufactures silk and rayon fabrics. France is an important producer of textiles. It accounted for 225,000 tonnes of cotton fabrics, 75,000 tonnes of woollens and 40,000 tonnes of rayon and acetate fabrics in 1964. What made Lyons an old silk centre of France ?



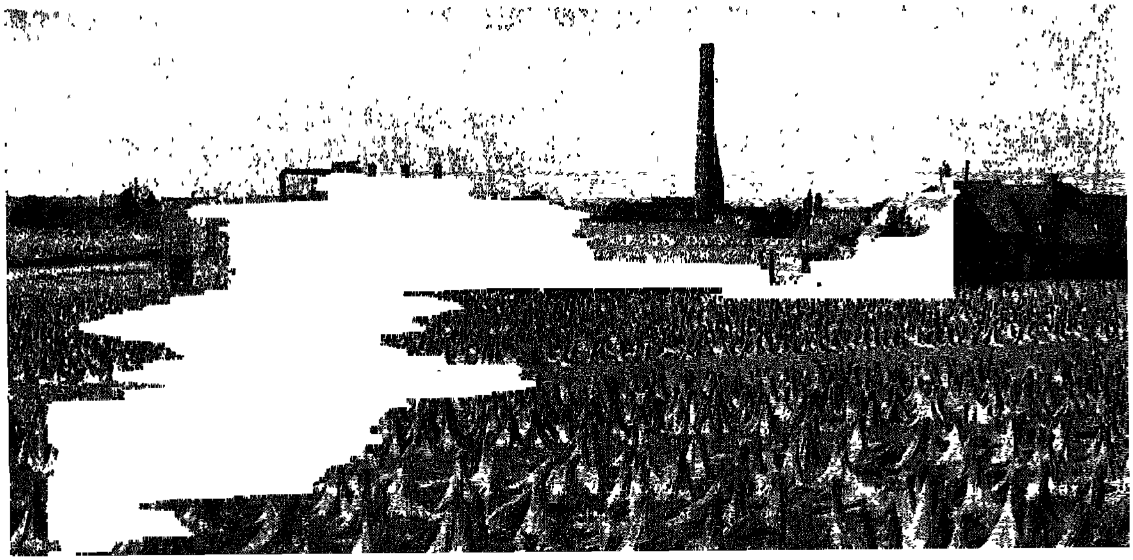


46. A Power Station on the Meuse River in Belgium *(Courtesy: Embassy of Belgium, New Delhi)*

With nearly 1600 kilometres of navigable waterways, the densest network of railways together with about 5 million kw of installed capacity, Belgium is the most industrialized country of Europe Why is it able to lead the world in per capita foreign trade?

47. A Flax Farm and Linen Factory in Belgium *(Courtesy: Embassy of Belgium, New Delhi)*

Look at the farm where flax has been harvested Belgium converts its flax into linen mainly for export. How is linseed connected with flax and to what use is it put?



CHAPTER 7

Northern Europe

SITUATED between 55°N and 71°N latitudes, the five countries of Northern Europe—Norway, Sweden, Finland, Denmark and Iceland—have many things in common. And yet, each one of them possesses an individuality of its own.

The land is made of old resistant rocks except in Denmark and the southern part of Sweden. Most of these lands have been highly glaciated. Norway and Iceland still contain the largest and permanent glaciers of Europe. The coastlines are highly indented, possessing some of the most majestic fiords of the world The land rises abruptly with steep cliffs and fiords along the Atlantic coast. In the east it slopes gradually towards the Bothnian Gulf and the Baltic Sea. The topography is highly broken with innumerable glacial lakes. The land is heavily wooded in several parts. Iceland is well-known for its volcanic activity, especially for its large geysers and wide lava fields. Denmark and the southern parts of both Sweden and Finland are relatively flat.

All the countries enjoy a very mild climate for their northerly location. Summers are short but the days are long and sunny. The exceptionally mild climate and heavy rain and snow are due to the warm and moisture laden westerlies. The warm waters of North Atlantic Drift keep the entire Norwegian coast free from ice all through the year. As against this, the eastern Canadian coast in the same latitudes is frozen for nearly four months.

The Baltic Sea is almost cut off from the influence of the North Atlantic Drift. Moreover, its waters are less saline. It is, therefore, frozen for a part of the year

Most of the countries are endowed with rich forests, natural fishing harbours and productive fisheries not far from the coasts. These countries make the maximum use of the seas to earn their living. Barring Denmark all have abundant water-power. The population is mostly concentrated in a few lowlands near the coast and dairying is the dominant agricultural activity. They are now increasingly taking to manufacturing, and enjoy a very high standard of living.

With a population of over 20 million people, the density of population in these countries varies from 2 persons per square kilometre in Iceland to 110 in Denmark. Barring the Finns and the Lapps, the people are of pure Nordic stock marked by their fair skin, blue eyes and blonde hair. Politically, the countries are known as socialist democracies and most of them like to be non-aligned in international relationships.

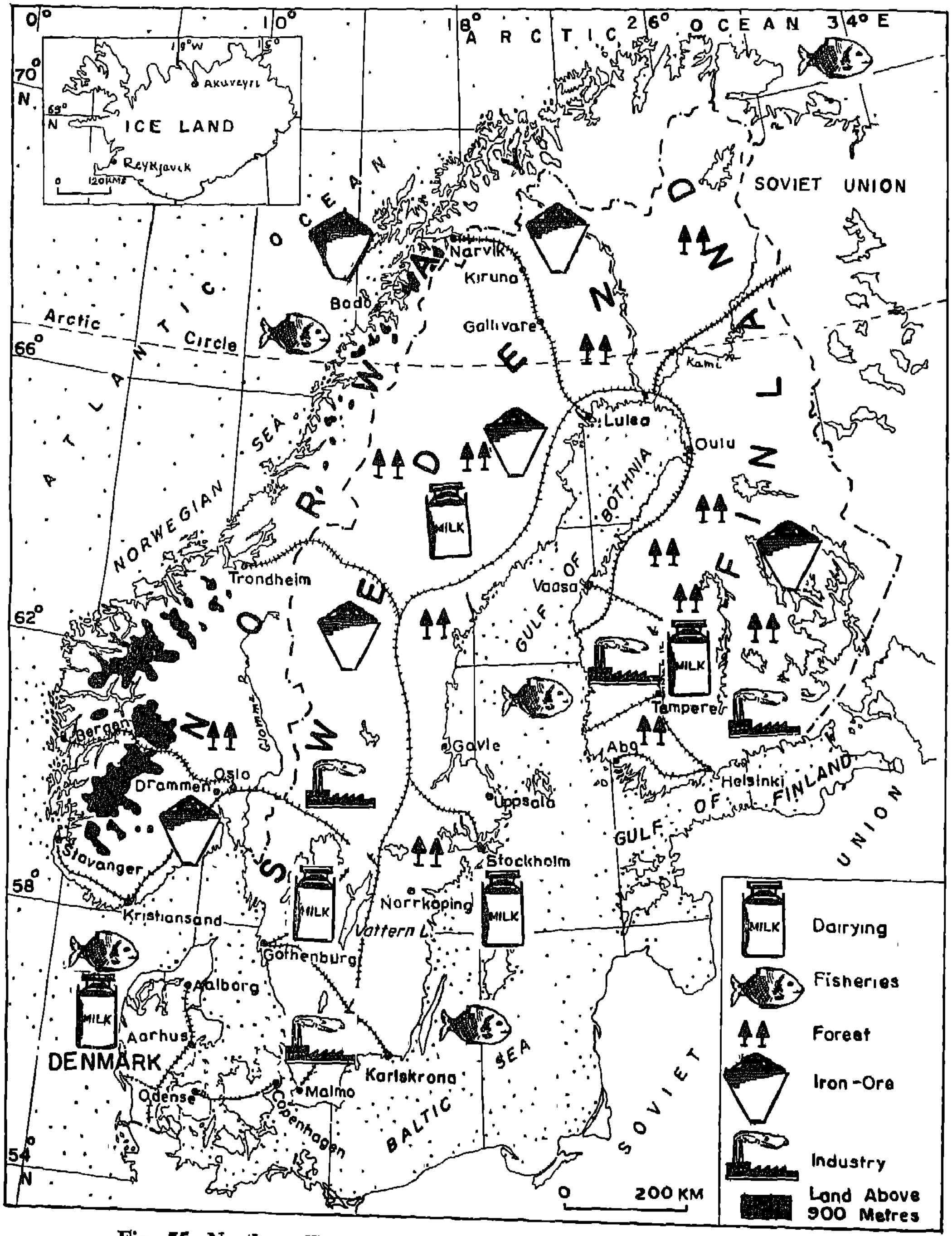


Fig. 55. Northern Europe—Relief Features and Economic Activities

Notice the highly indented nature of the coastline, large number of lakes and the high mountains along the Norwegian coast. Note the importance of forestry and fishing in the region. Why is the Baltic Sea frozen in winter unlike the Norwegian Sea lying further northwards ?

The co-operative movement has made great headway in many of these countries.

NORWAY

With nearly a third of its total area lying within the Arctic Circle, Norway is a subarctic country. Stretching for over 1700 kilometres from south-west to north-east it possesses an area slightly bigger than the Maharashtra State.

In northern Norway the "sunlit nights" are two and a half months long—from the middle of May to the end of July This explains why Norway is called a land of the midnight sun. Similarly, the "sunless dark days" continue from the end of November to that of January.

Physical Setting

This extremely rocky country is one of the loveliest lands of Europe. It is known for its high plateaus, precipitous U-shaped valleys and deep fiords Fiords are nothing but deep U-shaped valleys partially submerged under sea water. Many of its fiords are a charming attraction for the tourists. They are also fine harbours. These mountainous lands have been considerably uplifted, heavily glaciated and highly eroded during the past few thousand years. Not even a fifth of the land is less than 150 metres above sea level.

Mountains and fiords have made Norway a land of isolated valleys. The coast of the country is about 3,400 kilometres long—the longest for any European country. If it were stretched out, it may extend well over 20,000 kilometres running half-way round the world, because of its highly indented nature. The country has about 150,000 islands and nearly 200,000 lakes, all very small Approximately 4 per cent of the land area is occupied by lakes and another 1 per cent by glaciers—which are among the largest on the European mainland.

The country enjoys a mild climate for any land situated so far north. The warm waters of its neighbouring seas and the westerlies keep it warm, even in winter. The temperature decreases as one moves from south to north, or from west to east.

Economic Development

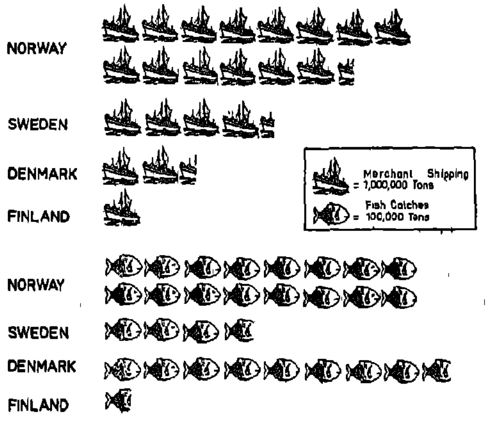
This fairly big land is inhabited by only a few, but very industrious and honest people. Its total population in 1964 was only 3 7 million, even less than that of Bombay city. The density of population is only 11 persons per square kilometre. Two-thirds of its population lives in villages making it the most rural of the Scandinavian countries.

Of its total area as much as 78 per cent is a rocky wasteland. Only 2·5 per cent of its total land area is arable. Still less is the land under permanent pastures. Yet, a large number of people live by agriculture. On the coasts, farmers generally supplement their incomes by taking to fishing for a part of their time. Inland, they devote some of their time to forestry and lumbering as nearly 22·5 per cent of its land area is under forests.

Fishing and whaling are Norway's very important occupations. Its fish catch varies between 1 5 to 2 million tonnes. Fishing grounds

Fig. 56. Merchant Fleets and Fish Catch of Northern Europe in 1964

Note the dominating position of Norway both in shipping and in fishing Besides the large fish catch, it caught nearly 7,500 whales. Why does Norway depend so much on seas to earn its living ?



change according to the seasons, bringing different varieties of catch to the harbours in different parts of the year

Whaling is equally important in Norway, although its annual catch is steadily declining. Many of its modern whaling ships are actually floating factories. They process and tin various whale products ready for despatch. At one time nearly half the whaling crew of the world came from this land.

Shipping is perhaps even more important than fishing It is the leading source of its foreign exchange earnings. The country has the fourth largest merchant navy in the world.

This is how Norwegians have turned to the sea to make a living, when they found their land rather inhospitable or reluctant to provide a comfortable living. The sea serves as a "coastal road" of Norway, linking up all the coastal towns effectively.

All along the western mountains the timber line is very low and trees stunted because of Atlantic gales. Norway's forest wealth is mainly concentrated in the sheltered south-eastern part of the country. Besides timber, the forests serve as a source of its industrial products such as wood-pulp, paper, newsprint and cellulose.

The rugged topography, the large icefields and glaciers and abundant rainfall have blessed the country with huge water-power resources. This is a country that has ample power to spare. It had nearly 9 million kw of installed capacity in 1964, the highest per capita for any nation Norway has also rich mineral resources, especially iron-ore, copper and iron-pyrites. It has some of the world's biggest iron-smelting furnaces at Mo-i-Rana near the Arctic Circle. Today, Norway is no more a country of just traditional fishing and lumbering. Its manufacturing industries employ a large section of its people and account for half the national income.

Dairying and animal husbandry are also important agricultural activities of Norway. Lately Norway has taken to mechanized farming and increased its agricultural production per head of labour engaged in farming. Hay, rye, oats, barley, wheat, potatoes and beet are the main agricultural crops. Nearly a third of its population is engaged in farming. Agriculture is confined to south and to the sheltered low valleys along the south-west coast. Trondheim depression in the west is yet another agricultural area where dairying is more predominant.

Oslo is the capital city of Norway situated on the Oslo Fiord—the widest in the country. This sheltered lowland in the south is the principal agricultural region of the country and is most densely populated. Half the population of Norway is concentrated in the few counties around this fiord. The city is situated about 125 kilometres inland from the sea, and is the most important manufacturing region with paper mills, cellulose and metal engineering plants.

SWEDEN

With an area comparable to that of Madhya Pradesh, Sweden is the largest of the Scandinavian countries. It stretches for over 1,500 kilometres north-south. About a seventh of its area lies within the Arctic Circle.

Physical Setting

From the mountainous heights along the Norwegian border in the north-west, the surface of the land slopes gradually towards the Baltic Sea. Northern Sweden is essentially a plateau region deeply cut by rivers flowing into the Gulf of Bothnia. This is a sparsely populated region, depending on forests and mines. The fast flowing rivers, besides providing natural transport for logs, offer ample water-power and assist in logging and mining operations. Central Sweden is a lowland studded with numerous lakes. The southern and eastern lowlands with fertile soil and mild climate form the heartland of agricultural and industrial Sweden.

The climate is mild for the latitudes of the country. In the north the winter lasts about seven months and the summer only three months. In the south the summer is about four months long, but the winter is only for two months. The increasing shortness of the summer in the north is, however, compensated for by high summer temperatures, greater length of the day and less of cloudiness. Rainfall is about 55 centimetres in the south and declines northwards where it is about 30 centimetres. The country receives considerable snow, particularly in central and southern parts The snow cover lasts for nearly half the year.

Economic Development

Forests, water-power and iron-ore are the three main natural resources of the country.

Nearly half of its land is covered by forests, pine and spruce forming the main variety of soft coniferous trees. It is claimed that there are more than 1,500 trees of economic value per inhabitant of the country Certain districts of the north are heavily wooded, broken only by rivers, roads and railways. In Sweden, the total cost of transporting a log from a forest to a sawmill does not exceed the postage required for an inland letter. This is because of its numerous rivers, providing natural waterways.

The country is one of the leading producers and exporters of lumber, wood-pulp, newsprint, paper, cellulose, matches and ships—all depending upon forest produce. Strict measures are taken to conserve forests and replant the trees in deforested areas.

Like Norway this country is also rich in water-power resources About half the electrical plants have been constructed underground to avoid freezing during the winter season. The installed hydro-electric capacity of the country is nearly 9 million kw. and almost all the railways are electrified.

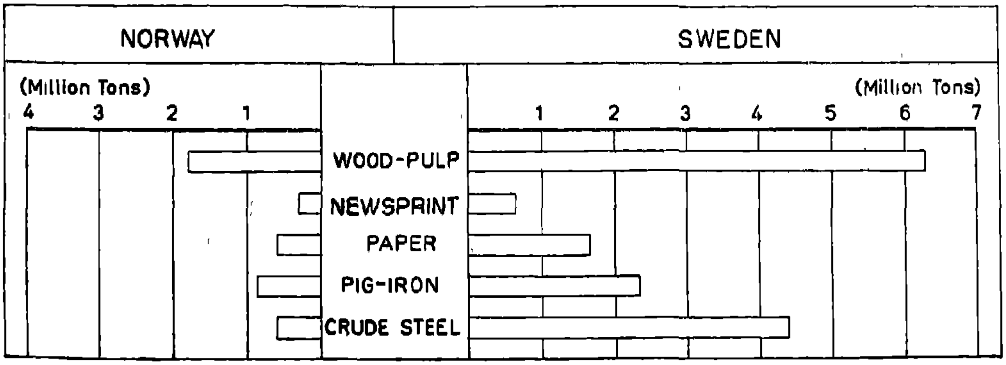
Sweden has very rich deposits of iron-ore in Bergslagen in its central parts and near Kiruna in the northern part of the country In 1964, the production was 16 million tonnes of ore. The country is a leading exporter of iron-ore, as it is short of coal and coke. It, however, specializes in electro-metallurgy and in specialized quality products For example, high-grade steel, machines and tools, ball bearings are its specialities.

The country produces motor cars, motor trucks, merchant vessels and tankers in large quantities. They form the second leading item of export after machinery It also exports considerable quantities of metals,

Only 8 per cent of its total land area is arable. Much of it is devoted to fodder crops for raising dairy animals. Only 15 per cent of the people are now in agriculture as against 50 per cent at

Fig. 57. Leading Manufactures of Norway and Sweden in 1964

Compare the relative positions of the two countries in various products. Sweden produced 16 million tonnes of iron-ore in 1964. How will you explain then its low production of pig-iron and crude steel ?



the turn of the century. Farms are small and mechanization is being encouraged. Efforts are being made to make holdings large enough so that the farmer's income may compare favourably with that of an industrial worker. Oats, wheat, barley, rye, potatoes, beets, vegetables, and fruits are major agricultural crops. The important agricultural area lies in the extreme south. The central lowlands along the Gulf of Bothnia is known for its dairying.

The country tends a large number of dairy cattle and produces half a tonne of milk per head of its entire population.

Nearly two-fifths of the total area of the country is a wasteland. Nevertheless it is one of the richest countries of the world. It has to import almost all its oil and coal from abroad And yet the country claims the consumption of 550 kilogrammes of steel per head of population Its standard of living is considered to be the highest in Europe. There is a telephone for every three persons, a radio set for every two, and a television set for every four persons. The 85 per cent of the telephone calls are handled automatically. Its telephone rates are the lowest in the world.

The country has flourished mainly because of the hard work-habits of its people, their highly efficient industrial organization, and the growing productivity of its industrial and agricultural labour. The country is known for its high sense of social responsibility. It was the first to introduce several social services like free education, midday meal for its pupils, free care of the old and the poor.

Stokholm is the capital city of Sweden with over 800,000 people. It is a great centre of art, learning, industry and manufactures. Sweden had a total population of 7.6 million in 1964, the average density of population being 17 per square kilometre.

DENMARK

Denmark, the smallest of the Scandinavian countries, is slightly bigger than Kerala. Its population of 4.7 million people (in 1964) makes it the most thickly populated country of Scandinavia. The average density of population is 110 per square kilometre, which is about one-third that of Kerala in India.

Physical Setting

Besides the main Peninsula of Jutland, the country consists of about 500 islands, only a hundred of which are inhabited. Surrounded by sea almost on all sides, it separates the North Sea on the west from the Baltic in the east.

The country is made of glacial deposits resting over chalk or limestone base With the highest point being only 171 metres above sea level, the average elevation of the country is only 30 metres The surface of the land is, however, rather uneven. Broadly, the western part of the country possesses poorer soils, whereas the eastern part is relatively more fertile and thickly populated. Parts of western Denmark are below sea level and are protected by dikes

Denmark enjoys a temperate climate. Its temperatures are moderated by the westerlies and by the waters of the surrounding seas. There is little variation between day and night temperatures. Its mean annual rainfall is about 60 centimetres.

Economic Development

Agriculture is the traditional industry. About three-fourths of the land is devoted to farming, much of which is under sown or natural pastures. At one time the country was mainly engaged in grain farming. When faced with keen competition from the New World lands, it switched on to stock-farming. This industry also grew so fast that the country had to import fodder to feed its livestock. Again, owing to the fall in the prices of dairy products, the country is now laying more emphasis on processed foods like ham, bacon and cheese.

Denmark is a country of poor soils but high yields. It specializes in raising root crops, seeds,

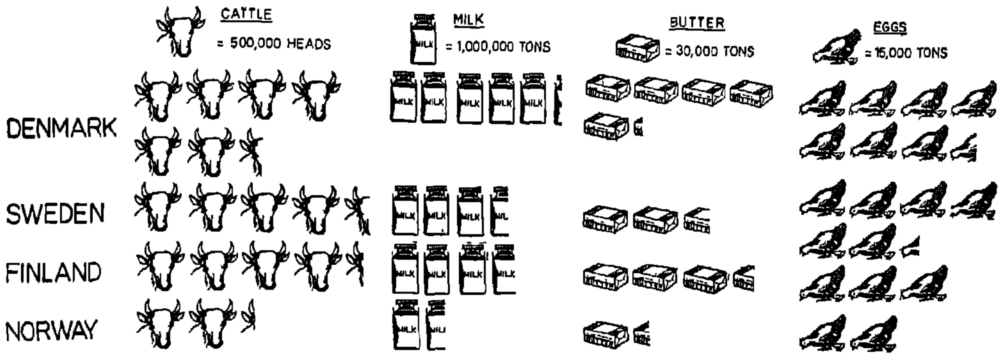


Fig. 58. Cattle, Dairy and Poultry Products in Northern Europe in 1964

Note the number of cattle in each country Find out which country has the highest per capita production of milk and butter.

forage, flowers and apples. It practises intensive animal husbandry on most scientific lines. Excellent co-operative system, farm management, marketing organization and strict quality control measures adopted by the government and co-operatives ensure high production and an assured international market for its products. They include poultry, dairy and other animal products and processed foods. Every egg that is exported is graded with the help of a screening machine, and carries a quality certificate.

Bacon, pork, butter, cheese, canned milk and eggs are the important exports of Denmark. With these exports it is able to import raw materials, animal feed, fertilizers and fuels—items in which it is deficient.

Since World War II, manufacturing has become more important than agriculture. It has all along been a maritime nation and possesses a big merchant fleet. Copenhagen is the capital city of the country where nearly a fifth of the country's population resides. It is one of the finest ports and attractive cities of Europe. The city is known for its silver-ware.

FINLAND

Finland has nearly a fifth of its northern territory lying within the Arctic Circle. Besides the mainland the country comprises thousands of islands in the Gulfs of Finland and Bothnia In size, it is comparable to the State of Rajasthan. However, nearly a ninth of its total area is occupied by lakes and rivers. Strictly, Finland is not a Scandinavian country.

Physical Setting

The land is made up of old rocks and is heavily glaciated. This glaciated land is credited with 55,000 lakes. It can be divided into three geographical units: Lapland, the Central Lake Region and the Baltic Littoral.

Lapland is a high and rugged area. It is covered with the poor tundra vegetation in the north and the stunted vegetation of the taiga in the south.

The Central Lake region is a land of highly broken topography with thousands of lakes, swamps and morainic hills. Forest is the major resource of this region.

The Baltic littoral is the principal agricultural and industrial region of Finland. It is favoured by fertile soils made of clay and silt, has more mild climate than any other part of the country.

The climate of Finland is mild for its latitudes as it is influenced by the westerlies blowing across the warm waters of the Atlantic Drift. In Lapland during summer the sun shines continuously for 57 days; but its winter nights are equally long. Helsinki situated on the southern shores is able to see sunshine during the whole month of December for not more than a total period of 17 hours.

Snow cover lasts from about 90 days in the south to 250 days in the north. It is the deepest in March when it may be over 60 centimetres thick in many parts of the country. The country thus becomes a skier's paradise for a period of three to seven months, depending upon the latitude of the area. Precipitation is about 70 centimetres in the south and declines to 50 centimetres in the north.

Economic Development

With over 70 per cent of its total land area under forests, it is not surprising that the forests are called "Finland's green gold". Timber cutting is done in winter and logs are floated out in summer when rivers are in spate as a result of the melting of snow. Pine, spruce and birch are the main species.

Dairying is the main agricultural pursuit of farmers. It produces nearly 3 8 million tonnes of milk. It has about 180,000 domesticated reindeer. It also produces rye, oats, barley, potatoes, spring wheat and sugar-beet.

The major industries of the country are wood and paper, and metal engineering. It has a well developed ship-building industry. The country is endowed with rich water-power resources and hydro-electricity is its 'white gold' on which it depends for its energy requirements. Finns are known for their qualities of hard work, frugality and ingenuity. Almost all the Finns are literate.

Helsinki is the capital city of Finland and the leading industrial and manufacturing centre. It is a city with nearly half a million people. The total population of the country is 4.5 million which gives the over-all density of 13 persons per square kilometre. The Baltic littoral, however, is one of the densely populated regions of Scandinavia.

ICELAND

Situated nearly 300 kilometres east of Greenland, Iceland is the westernmost country of Europe. It is situated close to the Arctic Circle.

Physical Setting

Iceland is a country consisting of a central volcanic plateau surrounded by high mountains. With nearly an eighth of the area under lava fields it is one of the most active volcanic regions of the world. There are a large number of hot springs and geysers. In fact, the word geyser now in use all over the world has been derived from "geysir"—the largest geyser of Iceland

This cold country largely covered with glaciers and snow fields also possesses tremendous heat underneath. It finds its outlet through the numerous hot springs, geysers and lavaflows.

Despite the northern location of the country it enjoys a fairly mild climate as a result of the North Atlantic Drift hugging its coasts. Iceland enjoys oceanic climate with little change of temperature from season to season. Winters are long, and fairly mild and summers short and cool.

Economic Development

Only 1 per cent of the land is under agriculture, yet nearly 20 per cent of the population is engaged in farming—raising hay, potatoes, turnips, oats and garden vegetables. However, it is animal husbandry which is more important than grain or vegetable farming. Sheep are the most numerous of all the livestock, but horses are also bred.

The country, however, lives almost entirely by fishing. Fish account for nearly 95 per cent of its total exports. Cod, haddock and herring form the important catch. Fish processing is the main industry with good facilities for freezing, salting, curing and extracting oil. The industry is flexible enough to switch on from one product to the other, depending upon the changing international market.

Reykjavik is the capital city of Iceland. This peace loving republic has no army of its own. Its urban centres are now connected by internal airlines The country has a total population of 185,000 with a density of nearly two persons per square kilometre. This small country draws its food mainly from the ocean and also lives by it.

EXERCISES

Review Questions

1. Answer the following questions:
   (*i*) Name the countries of Scandinavia.
   (*ii*) How old are Caledonian Mountains ? Where are they situated ?
   (*iii*) What is "green gold" and "white gold" ?
   (*iv*) Which is the capital city of Norway ? Where is it located ?
   (*v*) How do Icelanders make their living ?
2. Give one technical term for each of the following .
   (*i*) A deep, narrow, steep-walled inlet of the sea formed as a result of submergence of a part of a glaciated valley.
   (*ii*) A fountain of hot water and steam which are ejected at intervals from a narrow fissure or vent connecting the deep source of water to the surface
   (*iii*) A river of mass of snow and ice that moves slowly away from its place of accumulation, carving a broad and steepsided valley in its way.
3. Give reasons :
   (*i*) Unlike the North Sea, the Baltic Sea is frozen part of the year.
   (*ii*) All the countries of Northern Europe, except Denmark, have abundant water-power.
   (*iii*) The Scandinavian countries make the maximum use of the seas to make a living.
   (*iv*) There are numerous fresh water lakes in Sweden and Finland.
4. Make correct pairs from the two columns:

(*i*) A country of poor soils but high yields.	Norway
(*ii*) A skier's paradise in winter.	Finland
(*iii*) A land of the mid-night sun.	Iceland
(*iv*) A land of geysers, hot springs, lava-flows and snow fields.	Sweden
(*v*) A country having the highest standard of living in Europe.	Denmark

5. Complete the following statement with a correct ending :
   Denmark now lays more emphasis on processed foods like ham, bacon and cheese because
   (*a*) its poor soils are not suitable for grain farming.
   (*b*) its climate is not conducive to stockraising
   (*c*) its people now consume very little cereals.
   (*d*) it faces a keen competition in dairy products.

6. Give an account of agriculture in Denmark highlighting its salient features
7. "The people of Norway have turned to the sea for their living when they found their land to be reluctant." Elaborate this statement by listing relevant points.
8. Explain why Swedish people are able to enjoy very high standard of living.

Finding Out

9. Collect information on various fishing and whaling operations and the annual world catch of fish. Do you think that there is a considerable scope for supplementing our food from the sea ?

Cartographic Work

10. Collect statistical data on any two items such as fish catch, tonnage of shipping, round wood cut, installed power capacity, or trade of Norway, Sweden and Denmark Show the data graphically and write a note on its per capita implications

Picture Reading

11. Study pictures No. 23 and 30 and say if the Norwegians are justified in turning to the sea to make their living.

Films Available

(*i*) North of the Arctic Circle. No. 7; 20 mins; English; R.N.E.
(*ii*) Geiranger (A Beautiful Fiord of Norway). 15 mins, English; R.N.E.
(*iii*) The Fledging (Norwegian Fishing). 20 mins, English; R.N E.
(*iv*) Progressive Norway. 30 mins, English; R.N.E.
(*v*) Picturesque Sweden. No. 914 85; 22 mins; English; D.T A
(*vi*) The Fortune in the Forest (Forests of Sweden). No. 634.9; 15 mins; English; D.T.A.
(*vii*) Picturesque Denmark. No. 914.89, 20 mins; English; D T A
(*viii*) Arctic Bounty (Swedish Electrical Power Plant). No. 10; 10 mins; English; R.S.E.
(*ix*) The Danish Dairy Story. No. 17; 13 mins; English; R.D.E
(*x*) Pattern of Cooperation (Denmark). No. 15; 23 mins; English; R.D.E.
(*xi*) This is Finland. No. 914 71; 27 mins; English; D.T.A.

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CHAPTER 8

Oceanic Europe

THE British Isles, France, Belgium, the Netherlands and Luxembourg are, all, considerably influenced by the oceanic climate. They are generally referred to as Oceanic Europe. Free from the extremes of heat and cold, these lands receive ample rainfall well distributed all through the year.

Coal and iron are the important mineral resources, compensating for the infertility of soils. Making the best use of these basic raw materials, the people of this region were the first to bring about the Industrial Revolution. In this task they were assisted by their ingenuity and the wealth which they amassed through the conquest of new territories and expansion of commerce. Oceanic Europe, otherwise also known as western Europe, still holds a dominant position among the leading industrial nations of the world, supporting the highest density of population. With highly skilled labour and efficient methods of production, its people maintain high standards of living. No other part of the world barring Japan depends so much on international trade for the prosperity of its people.

In spite of the infertile soils, the agricultural yields of these countries are among the highest in Europe. Mixed farming is the rule and stock-

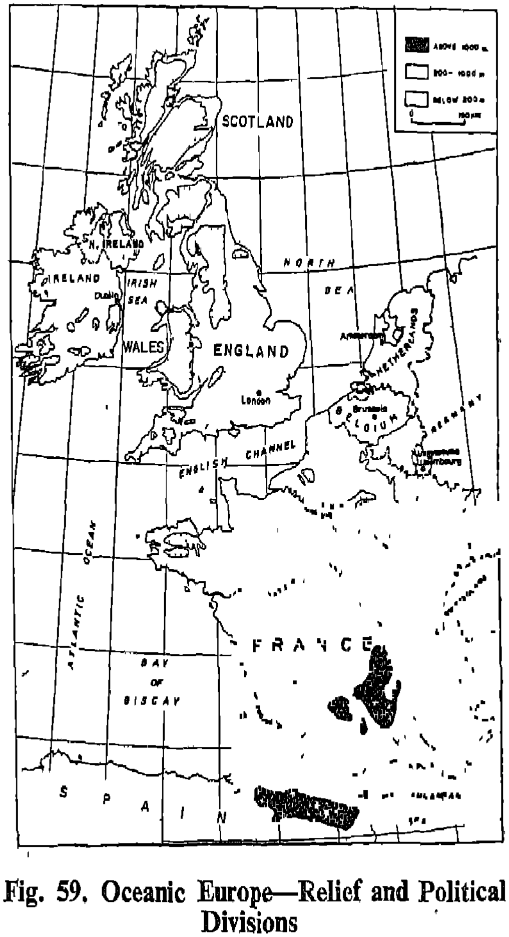

Fig. 59. Oceanic Europe—Relief and Political Divisions

Note the English Channel that separates Great Britain from the European mainland. How has this narrow strait of water affected the history of the British Isles?

raising and dairying is the most important sector of agriculture. Some of the best breeds of milch cows belong to this region. In fact, this region was the first to bring about an agricultural revolution by adopting a scientific approach to farming.

With a special genius for international trade and commerce the people of these countries together with Spain and Portugal were responsible for discovering unknown continents, settling in new lands and building large empires. The empires they built have been short-lived but the fruits of industrial and agricultural revolution developed in their wake are being shared by almost all the nations of the world.

The combined contribution of these countries in the field of art, literature, learning, science and technology is equally significant.

THE BRITISH ISLES

The British Isles consist of nearly 5,000 islands and islets; but only the two islands—Great Britain and Ireland—are big enough to attract our attention. Great Britain, the bigger of the two islands, consists of England, Scotland and Wales. The total area of the British Isles is slightly more than the area of Maharashtra, or about the tenth of India.

The British Isles comprise two sovereign states—(*i*) the United Kingdom of Great Britain and Northern Ireland; and (*ii*) the Republic of Ireland, better known as Eire.

THE UNITED KINGDOM

The Industrial Revolution, Parliamentary Democracy and the spread of English language are among the most outstanding contributions of the British people to the world at large.

The English Channel separating Great Britain from the continent has been partially responsible for the importance which this country received out of all proportions. It is responsible for the degree of security and freedom from invasion, at least by a land army

Equally significant is the favoured position which the British Isles occupy on the busy crossroads of international trade routes between Europe and the rest of the world. All this has led to the early development of modern industry, the rise of a powerful middle class and new processes of manufacturing based on the use of steam and mechanical power.

The long and indented coastline of Great Britain has many excellent harbours. No part of the island is more than 125 kilometres from tidal waters. This has made Britain a maritime nation of the first order, and till recently she was the undisputed mistress of the seas Its courageous fishermen and adventurous sailors were responsible for discovering different parts of the world and establishing trade relations with far off lands.

The temperate and equable climate has all along been an asset to this industrious nation.

The rich deposits of coal and iron-ore led to the rise of British industries, especially iron and steel and ship-building. The acquisition of new colonies and the conquest of tropical lands provided it with raw materials and an assured market. This explains the rapid growth of the British textile industry. The industries and international trade and commerce compensated for its lack of agricultural resources and paucity of indigenous food supply.

What is perhaps more striking is its adaptability to the changing environment. The degree to which it has adjusted itself to the loss of its colonies and big empire is remarkable.

Physical Setting

Situated on the continental shelf, off the north-western shores of Europe, the island of Great Britain is only 33 kilometres from the continent at its nearest. The total area of the United Kingdom is nearly as large as the State of Jammu and Kashmir.

The island of Great Britain possesses a heavily indented coastline and is endowed with a large number of natural harbours, big and small, A hilly terrain dominates the north, west and south-west of Great Britain. Undulating downs and plains are mostly confined to the south and south-east. Great Britain possesses highlands or uplands but not mountains as such Its highlands are highly glaciated. Large parts of the country especially the lowlands are covered with glacial drift. Northern Ireland is characterized by low plateaus and hills

The United Kingdom enjoys a marine or oceanic climate free from extremes. It can also be described as temperate and equable. The climate is exceptionally warm for its latitudes, mainly because of the Atlantic Drift and the westerlies. The temperatures decrease from south to north. The range between summer and winter temperatures goes on increasing from west to east as the influence of the Atlantic Drift and the westerlies gradually wanes away.

The average precipitation for the United Kingdom is about 100 centimetres. At London it is barely 60 centimetres. The distribution of rainfall over the year is fairly uniform with a slight winter maximum.

The western depressions passing over the islands tend to make the weather cloudy, humid, rainy and often foggy. In fact, the constant change in weather from hour to hour is a characteristic feature of the climate of the British Isles. The scanty sunshine is yet another feature of English weather. On an average the sunshine in winter ranges between half an hour and two hours a day.

Economic Development

Farms, especially the pastures, fisheries and mineral power—particularly coal—are the major resources of the United Kingdom.

Nearly half of its land is under permanent meadows and pastures. The western part of the country is predominantly pastoral.

The cultivated land is a little less than a third of the total land area. This is concentrated mainly in the eastern part of the country. About 7 per cent of the land is under forests. Nearly 30 per cent of the total land is being tilled and developed by even less than 5 per cent of the total population, producing enough food for 50 per cent of the total population.

The major agricultural crops are barley, wheat, oats, potatoes and sugar-beets Fruit and vegetable gardening are becoming increasingly important. In spite of the small area under cultivation, the yields are substantially higher than those of many countries of the world. With more than half a million tractors, the country has been now fast mechanizing its agriculture.

Stock-raising is the most important sector of agriculture. The United Kingdom raises some of the world's finest breeds of livestock. Famous among the dairy cattle are Shorthorn, British Friesian and Jersey. The prominent among the beef cattle are Hereford and Beef Shorthorn. The country exports these breeds in large numbers. Now-a-days, there is greater emphasis on the export of live dairy cattle, whereas at home there is a greater demand for beef cattle. Of late, dairying industry is becoming increasingly mechanized. It produces nearly 13 million tonnes of milk, with over 3,000 kilogrammes of milk per head of milch cow per annum.

The country is surrounded by shallow seas less than 100 metres deep. These shallow seas provide excellent breeding ground for the fish. The ocean currents and the rivers falling into the North Sea ensure constant supply of plankton —the food for the fish. The Dogger Banks are the principal fisheries off the eastern coast of Great Britain Cod, haddock, sole, plaice and turbot are the chief deep-water varieties, whereas herring, mackerel, pilchard and sprats are the shallow-water species. The total fish catch is nearly a million tonnes a year and forms an important item of daily diet.

The forest resources are very meagre and the country has to import 85 per cent of its timber requirements.

Coal is by far the most important natural resource of the country It was mainly responsible for the rapid and early industrialization of the United Kingdom. The coal-mining industry has

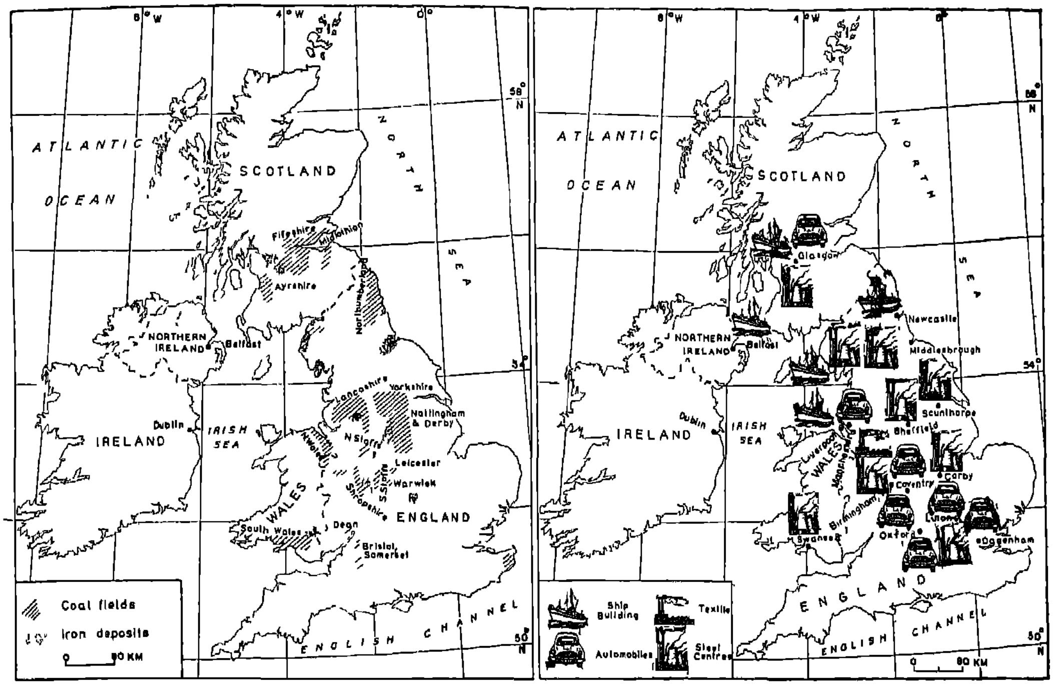

Fig. 60. The British Isles—Mineral Deposits and Industries

Compare the two maps and note the relationship between them. Where will you expect a high density of population in British Isles ? Why ?

been nationalized since 1947. The largest coal-field is spread in Yorkshire, Derbyshire and Nottinghamshire producing about 45 per cent of the nations's coal. Hard steam coal is mined in South Wales. Anthracite coal is found in north-western England. In Scotland the major coal-fields are in Northumberland, Durham and in the Midland Valley. By value, coal accounts for nearly 90 per cent of the total mineral output of the country.

Once the coal-mining industry employed over a million labourers, now this number has come down to half a million. This is because of mechanization of the industry and falling exports. In 1965, the total production of coal was nearly 200 million tonnes. The good reserves of coal are being worked out rapidly. The country is still the fourth largest producer of coal.

Coal supplies nearly three-fourths of the total energy produced in the country. Nearly 50 million tonnes of petroleum is imported every year. The proportion of hydro-electricity is very insignificant The United Kingdom was the first to produce atomic energy for commercial purposes It is now being developed extensively. Nearly 5 to 6 million kw. of power is generated in recent years by the atomic power plants.

Iron-ore is the next important mineral resource of the country. In 1850, the United Kingdom produced half the world's iron and nearly 70 per cent of the steel. By 1961, its share had dropped down to just 6 per cent of the world output. Its iron-ore deposits are of low grade and are almost exhausted. In 1964, the production of iron-ore from internal sources was 4.5 million tonnes. The total output of pig-iron was 17.5 million tonnes and that of crude steel 26.6 million tonnes, obviously based on imported ore. Thus today in the production of

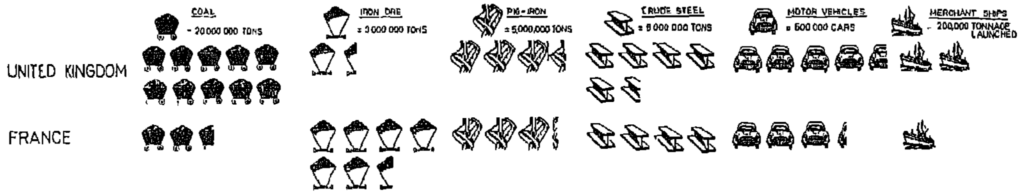

Fig. 61. Mineral and Industrial Production of the United Kingdom and France

Compare the position of the two countries in respect of coal and iron-ore. How do the United Kingdom and France make up their deficiency in iron-ore and coal respectively ?

iron and steel, the country is surpassed by West Germany and Japan, besides the United States and the Soviet Union. Even China is producing more pig-iron than the United Kingdom.

The chief area of production is north-eastern and eastern England, accounting for nearly half the total output. Middlesbrough is the leading centre, the other centres being Newcastle, Leeds and Sheffield. The iron and steel industry is to a large extent located on the coal-fields of Yorkshire and Durham-Northumberland. South Wales is another important steel-producing area Port Talbot claims to have the largest steel plant of Europe. The other centres are Cardiff, Swansea and Ebbw Vale. The area is favourably situated to import iron-ore from abroad

In ship-building the United Kingdom led the world for nearly the last two centuries. Today, however, it has been surpassed by Japan. In 1964, it launched one million tonnes of new merchant ships and 400,000 tonnes of tankers. The major ship-building yards are located at Belfast in Northern Ireland, and on the mouths of the Tyne, Wear and Tees in North-east England, and on the Clyde estuary in Scotland.

The country has a well-developed automobile industry located at Coventry, Oxford and Birmingham It produced 1.86 million motor cars and 460,000 commercial vehicles in 1964 It is surpassed only by the United States and West Germany.

The textile industry at one time was the pride of the nation. Today it has been surpassed by about half a dozen countries. It is still an important industry playing a dominant role in the national economy.

Lancashire is the chief region which specializes in cotton textiles. Manchester is the chief commercial centre and Liverpool its port. The woollen textile industry is concentrated in the West Riding of Yorkshire, with Leeds-Bradford as the principal centres. For synthetic fibres the important centres are in the Midlands, Lancashire and Wales. Northern Ireland has the linen textile industry. Clothing and garments form an important item of the nation's export trade.

Non-ferrous metals and metal goods, chemicals, electrical goods, machinery, railway equipment, aircrafts, processed foods, beverages and tobacco are the other important items of manufacturing industries of the United Kingdom. They all stand high in the exports of the country.

Transport and Population

The country has the densest network of railways surpassed only by Belgium in the world. Its railways have been nationalized since 1948. In road density perhaps it is unsurpassed by any other nation. There were about 8.5 million cars and 1.7 million commercial vehicles plying on its roads in 1964.

The merchant fleet of the country stands next only to that of the United States. It had 21.5 million tonnes of merchant vessels and 8 million tonnes of tankers. The country has over 300 ports, important among them are London, Southampton, Liverpool and Glasgow. The last three ports together handle about two-fifths of the nation's foreign trade The Thames is an important navigable river of the country.

London is the hub of the railway, water and air transport. London is connected by air with almost every major city of the world. British Overseas Airways Corporation (B.O.A C.) is the major air company for international flights Like Air India it is also a national undertaking

The total population of the country in 1964 was 54 million people, giving it the average density of 222 persons per square kilometre. With large areas of Scotland and the western highlands being very sparsely populated certain areas, especially the lowlands near the ports and coal-fields, are very densely peopled. About four-fifths of the population is urban. Nearly two-fifths of the total population is concentrated in the seven metropolitan areas of London, Birmingham, Glasgow, Liverpool, Manchester, Leeds-Bradford and Newcastle on Tyne.

Regions of the United Kingdom

The major divisions of the United Kingdom are Scotland, England, Wales and Northern Ireland.

Scotland

Scotland is divided into three regions—the Northern Highlands, the Scottish Midlands and the Southern Uplands.

Covering about two-thirds of Scotland, the Northern Highlands consist of one of the oldest mountains of Europe. Worn down by erosion, today they are known for their rugged and wild landscape. The poor agricultural resources are supplemented by sheep-rearing and fishing

The Scottish Midlands is a rift valley consisting of flat lands and low hills. It separates the highlands on its either side on the north and south. The Scottish proverb—"Rather an acre in Forth than a county in the North"—explains the importance of this relatively fertile agricultural land It grows oats, wheat, hay, potatoes and sugar-beet. Dairying is a flourishing industry The coal deposits have led to the industrial development of the region, with Glasgow on the west as the principal industrial centre. It is known for its production of steel, locomotives, ships, machines and chemicals. Edinburgh on the east is the political and intellectual centre of Scotland.

The Southern Uplands is a region of low hills and plateaus. It is an important grazing land of the country. The Tweed Valley is known for the production of the woollen textiles named after it.

England

This is one of the most industrialized regions of the world. Its three most important industrial regions are: (*i*) North England spread on either side of the Pennines, (*ii*) the English Midlands lying south of the Pennines, and (*iii*) the London Basin. The important agricultural regions are: (*i*) Eastern England between the Thames and the Humber, (*ii*) Southern England between the southern coast and the Thames, and (*iii*) the South-western England.

North-west England, popularly known as the "Lake District" of Cumberland, is known for its tourist industry.

Further south Lancashire is the region known for the British cotton textile industry. Several factors have been responsible for the origin and development of its textile industry. The local people possessed a long tradition of spinning and weaving The natural humidity of atmosphere was an asset for spinning Easy availability of coal provided the needed power. Ample supplies of soft water and salt facilitated bleaching and dyeing cloth. The port facilities of Liverpool and the Manchester Ship Canal made it easy to import cotton from abroad, especially from the United States, and to export cloth to other countries.

North-east England is the major centre of coal mining and iron and steel production in the country. Newcastle is the leading port for the export of coal. It is also the centre of a shipbuilding industry. Middlesbrough is the chief iron and steel centre of the country famous for the manufacture of heavy items of hardware like girders. On the Southern Pennines Coal-field are located the woollen mills of Leeds and Bradford, and the steel mills and machine shops of Sheffield, known for the cutlery.

The English Midlands are reputed for their heavy industries, with Birmingham and Coventry as the chief centres. It is a region of diversified industries—automobiles, aircraft, and machines and tools It is often called the "black country" because of innumerable chimneys emitting smoke, day in and day out.

The London Basin is perhaps the most important part of the United Kingdom London, the heart of this region, is situated at the head of the estuary of the Thames. It is the leading port of the British Isles and the premier business and commercial centre of not only the United Kingdom but also of the Commonwealth and the sterling currency area. The city is also the intellectual nerve-centre of the United Kingdom and is the largest urban centre of the country. Today it is the prominent industrial centre with engineering, chemicals, textiles, and automobile industries employing large numbers of people. Westminster Abbey, Buckingham Palace, the Parliament House and the London Tower are among the chief attractions of the city. London today is one of the busiest hubs of international air transport.

Eastern and southern England are the leading agricultural areas of the United Kingdom. The climate is warmer, less rainy and less foggy. This is the best cropland and the granary of England. Wheat, oats, hay, sugar-beet, vegetables and orchards are the principal crops. Mixed farming is commonly practised. Oxford on the upper Thames is the famous seat of learning and the centre of an automobile industry. Cambridge on the river Cam is another important University town, also located in this agricultural region.

South-western England is known for its moderate climate and favourite resort centres. It grows flowers and vegetables Dairying is also important. Bristol is the important port. This region has still the charm of a quiet rural life.

Wales

It is a hilly region known for sheep grazing and subsistence farming. Southern Wales, however, is an important mining and industrial region. High quality coal is mined in this area. It is used by the local metallurgical industry and also exported in large quantities as bunker coal, the demand for which is, however, diminishing because of the change-over from coal to oil in ocean-going liners. Smelting of zinc, tin and nickel are the specialities of Welsh metallurgy Tin plates are its leading product. The special charm of Wales lies in its colourful rural life.

Northern Ireland

It is known for its ship-building industry at Belfast with the largest dockyards in the United Kingdom. Londonderry is reputed for its linen industry. The industry subsists on the local production of flax. Pottery is a small-scale industry of the countryside.

THE REPUBLIC OF IRELAND

Its green fields, meadows, moors and peat bogs have given it the name, "Emerald Isle". Its topography resembles a saucer, low at the centre with rim-like hills on all sides. Peat is its domestic fuel and waterpower supports its few industries, in the absence of coal. Because of its poor resources, a large number of its inhabitants have been continually migrating from this land, mainly to the United States

It has nearly 48 per cent of its land area under permanent pastures, and 18 per cent is arable land.

Potato is the main crop followed by barley, oats and wheat. Livestock raising, however, is more important than farming

Dublin is the capital city of the Republic and it is its only industrial centre. The total population of the country is 2.8 million, with average density of 40 persons per square kilometre.

FRANCE

If one were to select a single country from Europe to represent European culture, the choice would invariably fall on France. The country can well be described as Europe in miniature. Very much like Europe, this is the only European country that faces three seas. It is a land of indented coasts and fine harbours, coastal lowlands and river valleys, and plateaus and high mountains covered with forests, pastures and snow-fields.

In the field of art and literature, science and technology, and political thought and social institutions it has always led the European world since the Middle Ages. The French, one of the richest languages of our times, has been the language of diplomacy during the nineteenth and early part of the twentieth century till it was replaced by English after World War II

France shares its land frontiers with Belgium and Luxembourg in the [illegible], [illegible] [illegible], Switzerland and Italy on the east and with Spain to its south. The total area of the country is about a sixth of India.

Physical Setting

France is endowed with a varied topography with elevations ranging from sea level to the highest peak of the Alps—the Mont Blanc is 4,807 metres above sea level. Ringed by mountains along its land frontiers, the country has become a homogeneous and well defined political and cultural unit. There are four important river basins: the Seine, the Loire, the Garonne and the Rhone.

Draining into the English Channel, the Seine with its large number of tributaries dominates the northern plains. On the west lies the Loire flowing into the Bay of Biscay. These two river basins together form the Paris Basin—the core of France.

To the north-west of the Paris Basin is situated the hilly land of Brittany and Normandy. This region consists of low worn-down hills of crystalline rocks

On the south-west of the Paris Basin lies the Aquitaine Basin drained by the Garonne. This river also falls into the Bay of Biscay. The coastal plain is strewn with shifting sand dunes.

The Rhone Basin stands to the south-east of the Paris Basin. Flowing southwards, the Rhone drains into the Mediterranean Sea. It provides a natural access between the Paris Basin in the north and the Mediterranean region in the south

The Central Massif stands boldly in the South Central area. This plateau consists of several extinct volcanoes.

Paris, situated on the confluence of the Seine and the Marne, occupies a very unique central position in the country with an easy access to all the plains and plateau regions of France

The climates of France are equally varied, with three distinct types—the oceanic, the continental and the Mediterranean.

With a low temperature range, ample rainfall, cool summers, and cool to cold winters, western France enjoys the typical oceanic climate. At Bordeaux the annual rainfall is about 80 centimetres. The rainfall decreases as one proceeds from west to east.

Much of eastern and central France has the continental type of climate, of course of a transitional nature. It is not so severe as in the central and eastern Europe. However, the region has warmer summers and colder winters as compared to those of western France. This part also receives ample precipitation both in the form of rain and snow The snowfall is particularly heavy in the higher parts.

Cool but wet winters, hot and dry summers and limited rainfall characterize the climate of southern France. Marseilles has an annual rainfall of about 55 centimetres. At Nice the mean annual temperature is 15°C as compared to 10°C of Paris.

France has forests of oak and beech in the north and central parts. These forests also contain pine, birch, poplar and willow.

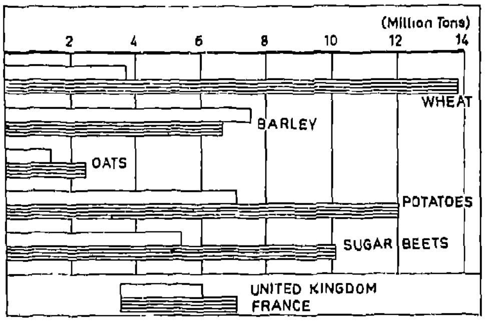

Fig. 62. Agricultural Produce of the United Kingdom and France

Note the position of the two countries. Explain the geographical factors which make France a leading agricultural country of Europe.

Economic Development

Agriculturally, France is the most important country of Europe. It stands next only to the Netherlands in the value of its agricultural exports. Nearly 18 per cent of its population is engaged in agriculture.

About 38 per cent of the land area is under cultivation. Another 24 per cent is left under permanent pastures and meadows. The area accounted for by forests is about 21 per cent. The land utilization of France suggests that it possesses varied natural resources, necessary for a balanced economy.

France with a total population of 48.5 million people has less than half a hectare of arable land per head of its inhabitants. Nonetheless, it is the only European nation self-sufficient in its food requirements. The Seine Basin is the major agricultural region specializing in wheat and root crops.

France specializes in wine production. It leads the world both in the production and consumption of quality wines. Grapes, raisins and barley are the raw materials from which a wide variety of wines are produced. It also produces some beer.

Animal husbandry is an important sector of French agriculture.

Mining and Industry

With 20.1 million tonnes of iron-ore production, France stood fourth in the world, in the year 1964. The most productive iron mines of France are located in Lorraine. The iron content in the ore is, however, low and hence much of the ore is smelted near the mines.

It produced nearly 53 million tonnes of coal in the same year. The production of natural gas was also considerable. It has sizable deposits of bauxite, tungsten, antimony and radioactive minerals. It also possesses salts and potash, necessary for chemical industries.

France is well endowed with hydro-electricity. In 1964 its installed hydro-electric capacity was 12 million kw. out of the total capacity of 26.7 million kw.

The manufacture of iron and steel is the leading industry of France. It produced 16 million tonnes of pig-iron and 20 million tonnes of crude steel in 1964. France is one of the leading steel exporting countries. Its steel and metallurgical industries are located around Lille and the Sambre-Meuse coal-field, and at Nancy and Metz in the Lorraine region. This area imports coking coal from the Ruhr fields in West Germany.

The linen and woollen textiles industry is concentrated in the north-eastern section, adjacent to the Belgian frontier; cotton textiles in the Lorraine area, and silk and rayon textiles in the Lyon District in the Rhone Basin.

Industries depending on forest products are also very important. The country produces wood-pulp, paper, and newsprint.

France is one of the leading producers of cars and commercial vehicles. In 1964, it produced 1.31 million passenger cars and 260,000 commercial vehicles. Paris is the centre of the automobile industry. The ship-building industry is concentrated at Bordeaux and Nantes on the west coast.

France produces aluminium on a fairly large scale. Its aircraft industry specializes in design

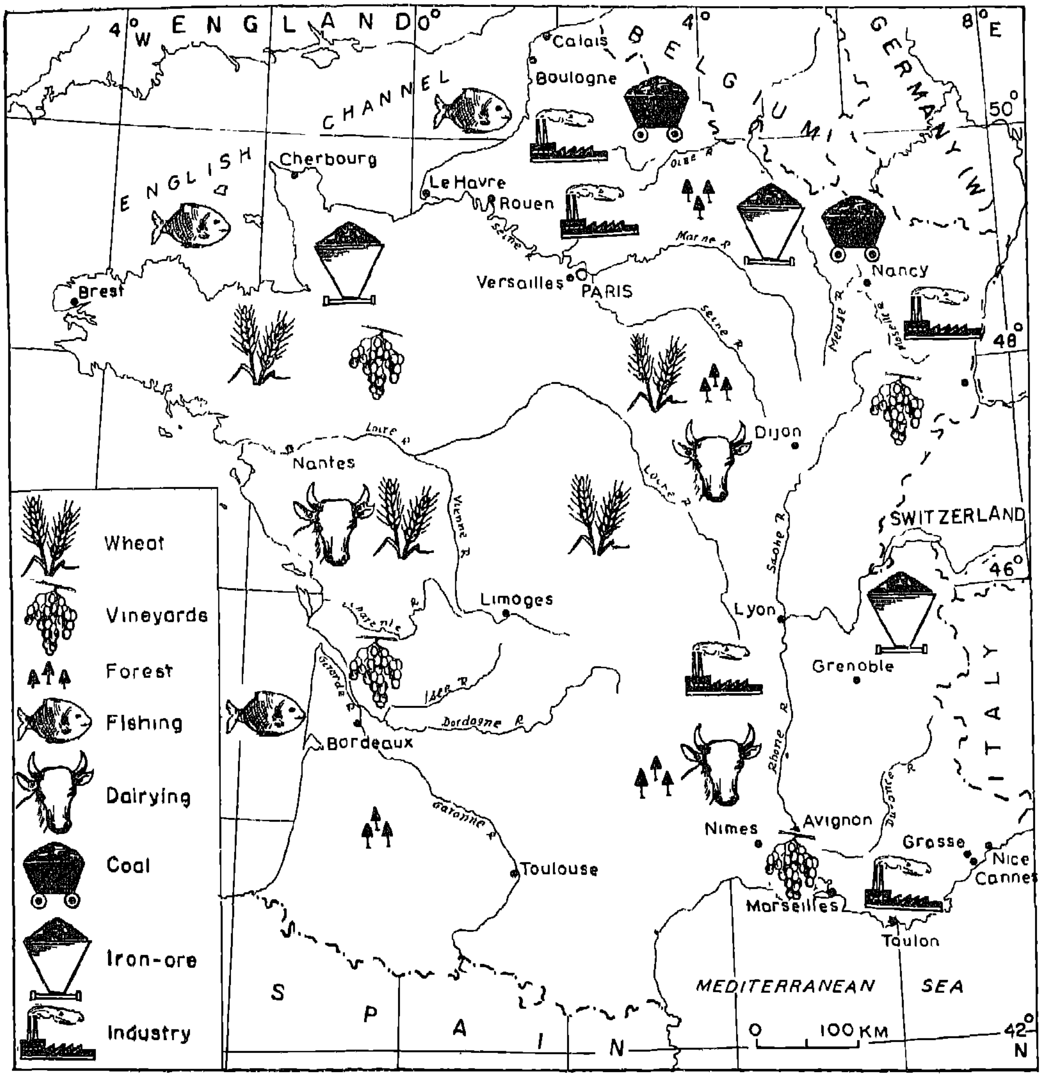

Fig. 63. France—Economic Activities

Note that France possesses varied resources to have a balanced economy. What makes France one of the leading industrial nations of Europe ?

and experimental development. This French industry ranks high in the world.

Among the new and fast-growing industries of France are chemicals, electrical goods and electronics The country also produces clocks, watches and leather goods, besides perfumes for which it is well known for a long time.

The striking features of French industry are inventiveness of French scientists and designers and preference for small-scale but high quality items Some of the French industrial plants are being modernized.

Transport and Population

France possesses a very highly developed network of transport. Paris is the hub of national transport where all railway lines and inland navigable waterways converge. Marseilles, Le Havre, Dunkerque, Rouen, Bordeaux and Cherbourg are the important ports of France. Orly, the international airport of Paris, is one of the most attractive and busy airports of the world. The country has a merchant fleet with a gross tonnage of over 5 2 million tonnes, and 2.2 million tonnes of tankers. Nearly 11 million cars and commercial vehicles ply on the roads throughout the country.

In 1964, the total population of France was 48.5 million people, with the average density of 89 persons per square kilometre. Nearly 57 per cent of the population is urban. There were 32 cities with a population of more than 100,000 people. Paris has a population of about 3 million.

Regions of France

The country consists of the following geographic regions: the Paris Basin, Northern France, Eastern France, the Rhone-Saone Valley, the Mediterranean region, the Central Massif, the Acquitaine Basin and Normandy and Brittany.

The Paris Basin is the heart of France. This alluvial lowland with deep fertile loamy soils is the main agricultural region of the country. It grows wheat, sugar-beets and potatoes. Raising of livestock is an important agricultural activity. Champagne district is famous for its vine crops. The wines made from the local grapes are known as 'Champagne', the most expensive of the wines. It is the most densely peopled part of the country with diversified manufactures.

Paris is the heart of the Paris Basin overshadowing every other city of France. It is one of the best planned cities of the world which grew round a river island, gradually spreading outwards. It can be said that the story of Paris unfolds the story of France and the glory of the country is reflected by this most beautiful city. Besides being the capital city of France, it is a leading centre of art, culture, learning and fashions renowned all over the world. It is also the headquarters of the UNESCO. The major industries of Paris are automobiles assembly, chemicals, electrical and electronics, food processing and printing, besides luxury goods, the renowned speciality of Paris. The city is thus a centre of highly diversified manufactures. It specializes in quality products.

Northern France is the leading coal-mining area of the country. It is equally important as an industrial region Textiles are its old speciality. Sugar and alcohol industries are its relatively new acquisitions. Lille is the main industrial centre of the region.

Eastern France containing the Lorraine and Alsace provinces is a centre of metallurgical, chemical and textile industries. This region is dominated by the low, old mountain-plateaus of the Vosges. Nancy, Metz and Longwy are the main industrial centres. This region contains the most important iron-ores of France and is crowded with steel mills and foundries Coke is imported from Germany.

The Rhone-Saone Valley is the natural route between southern France and the Paris Basin in the north Vineyards of this region are famous for the Burgundy wines. Lyon is the industrial centre with silk as its ancient industry. To the east of the valley are the high Jura and the Alps. Forests and pastures are its important resources. Transhumance is widely practised in this mountainous region which is also the centre of attraction for the tourists.

The French Riviera along the Mediterranean is also known for its pleasant climate and health resorts like Nice. Fruit gardening is an important agricultural activity. Marseilles is the largest port of France on the Mediterranean Sea. It is the gateway for the imports of tropical raw materials.

The Central Massif is a heavily eroded plateau of France which is climatically semi-arid. Rivers have cut deep valleys and canyons in this old plateau region. Cattle and sheep rearing, and irrigation agriculture support a sparse population. Bauxite ore is the important resource and a few aluminium plants are now coming up.

The Pyrenees provide ample water-power for south-western France and support tourist industry

The Acquitaine Basin is drained by the Garonne River into the Atlantic. Good alluvial soils support cereal farming. The region is also known for its grapes and fruits. Fishing is a significant activity along the coast Bordeaux is the important port of France on the Atlantic and is a centre of ship-building.

Normandy and Brittany in the north-west constitute a region of low hills and shallow, infertile soils. It is the leading dairying region. Fishing is an important activity along the highly indented coast studded with fine natural harbours. Fruit and vegetable gardening are less important than stock-raising and dairying. Rouen, Le Havre and Cherbourg are the important harbours. Brest is the leading naval centre of France on the Atlantic Ocean.

The Island of **Corsica** in the Mediterranean belongs to France This mountainous island, poor in resources, is sparsely populated, mostly by herdsmen, gardeners and fishermen.

THE LOW COUNTRIES

Belgium, the Netherlands and Luxembourg are jointly known as Benelux—a short name coined by a combination of their beginning letters *be*, *ne* and *lux*, respectively. Geographically, they are known as the "Low Countries" for large parts of them especially of the Netherlands are of very low altitude, and in some places even below sea level.

All these countries have benefited from their advantageous location at the crossroads of one of the busiest traffic and trade routes in the world. The bulk of the foreign trade of Germany and Switzerland following the Rhine is funelled through the low countries. The international trade and communication have always enriched these countries. The combined delta of the Rhine, Meuse and Scheldt is the most densely peopled part of the whole of Europe. It also controls the trade of the most industrialized hinterland of Europe. Besides the Rhine, the plains of the Low Countries give easy access to the Rhinelands, the Paris Basin and parts of southern France.

With a very small area of 66,000 square kilometres the Low Countries contain a total population of 21 5 million people.

BELGIUM

Belgium is a small country with an area smaller than that of Kerala But with its 9.3 million people it is one of the most densely populated countries of the world. On an average there are 304 persons per square kilometre of its total area. For its size and population, it is the most industrialized nation of Europe.

Physical Setting

The country is divided into three regions—a coastal belt, the central plains and the southern uplands.

The coastal belt consists of coastal sand dunes, pasture lands and polders—the lands reclaimed from the sea and protected by dikes. The central plain is a region of fertile valleys irrigated by river canals. The Ardennes Highlands in the south is a heavily wooded plateau. The Scheldt and the Meuse are the major rivers of Belgium.

The climate of the coastal region is mild and humid. In the interior mild summers alternate with cold winters Fog and drizzle are the rule for the major part of the country, where rainfalls are frequent all the year round. The southern highlands receive some heavy showers. The mean annual rainfall at Brussels is about 65 centimetres.

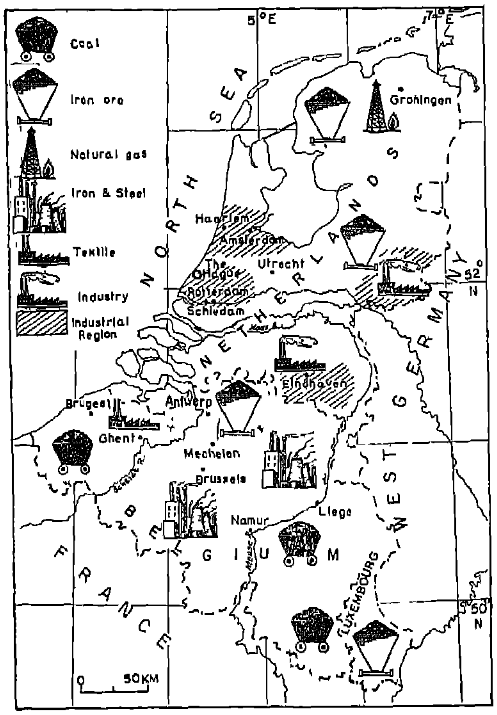

Fig. 64. The Low Countries—Mineral Deposits and Industries

Note the location of the Netherlands and Belgium What are the merits and demerits of their location ? What is the secret of their industrial development ?

Economic Development

Of its total land area nearly 30 per cent is under cultivation, about 27 per cent is under permanent pastures, with another 20 per cent under forests

About one-ninth of the active population is engaged in agriculture, which is about the lowest percentage in the world. It produces wheat, barley, oats, potatoes and sugar-beet. However, animal husbandry is its more important agricultural activity. In 1964, it produced 3.8 million tonnes of milk and 82,000 tonnes of butter.

The country is poor in natural resources except in coal, but it is a highly industrialized country. This is because of its geographical location, favourable climate, a very good network of transport, ease in importing raw materials, and the high technical know-how of its people. With about 50 per cent of its production exported, Belgium leads the world in per capita exports.

With all its iron-ore imported from France, Luxembourg and Sweden, the country ranks high in the manufacture of iron and steel. Its production of pig-iron was 8 million tonnes and that of steel 8.7 million tonnes. It produced 21 million tonnes of coal for consumption at home and for export. For its industrial energy, it heavily depends on coal and thermal power.

The country produces metallurgical goods, finished steel and railway equipment. This is by far the most important sector of its heavy industries.

Textiles rank next in importance. It produces cotton, woollen, rayon and acetate fabrics. In fact, the textile industry is a very old industry of Belgium—older than that of Britain, and one of the oldest in Europe.

The country's industry depends largely on imported raw materials. It specializes in processing these into finished products for re-export. Large quantities of tin, zinc, copper and lead ores are imported, refined and re-exported.

Belgium has a well developed chemical industry. Fertilizers, glassware, coal-tar, plastics are among its important exports. Antwerp is a famous centre for diamond cutting.

The country has the densest railway network in the whole of Europe. There are about 10,000 kilometres of railways, 11,000 kilometres of highways, and another 35,000 kilometres of other roads. Antwerp is its leading port.

This small country is bilingual, with French and Flemish as its languages. In addition to this, there is also a strong minority of German speaking people. The country has benefited from its location flanked by the most industrialized nations of Europe. But in times of war it also suffered at the hands of its powerful neighbours.

THE NETHERLANDS

Situated on the rich alluvial Rhine Delta the Netherlands is bounded by the North Sea on the west and north, by West Germany on the east and Belgium on the south. This is perhaps the only maritime nation whose land area has been gradually increasing as its people are constantly at war with the sea, reclaiming large areas from it every year. In 1963, its total area was 33,612 square kilometres. With such a small area and a population of nearly 12 million people it has the highest density of population—356 persons per square kilometre—in the whole of Europe. In fact, Kerala and West Bengal are the only States in India with a higher density of population than that of the Netherlands.

Physical Setting

The country is divided into three topographic regions—the dunes, the polders and the eastern uplands.

An almost continuous long chain of sand dunes along the western coast protects the low alluvial lands to its east from the high tides of the North Sea.

The polders—flat, alluvial lowlands reclaimed from the sea—form the most important asset of the agricultural Netherlands. Nearly two-fifths of the Netherlands is below sea level. These lands are protected from the sea through great dikes. The lowest point in the country is about 7 metres below sea level.

The southern and eastern sections of the country are uplands or the plateaus of hard rocks, the eroded remains of the old mountains.

The Netherlands enjoys a maritime climate with very mild winters and cool summers. Whereas fogs are found only in winter, the appearance of clouds is almost a daily feature. The average annual rainfall is about 70 centimetres.

Economic Development

The Netherlands has only 30 per cent of its land under cultivation. Another 38 per cent is left under permanent pastures and meadows. The forests account for 9 per cent of its land area.

Thus, with nearly 12 persons per hectare of arable land, there is obviously tremendous pressure of population on the cultivated land. This explains why the country is constantly at war with the sea, wresting as much land as possible from the surrounding shallow seas.

The country has undertaken the reclamation of muddy foreshores by constructing embankments or dikes in the Zuider Zee, Flanders, Zeeland, Friesland and South Holland. The construction of dikes protects the land from the sea-waters. But it is necessary to ensure the escape of rain-water and ground water. Formerly this was done with the help of numerous drainage canals and windmills all along the canals and dikes. The introduction of steam pumps has now made this task easy. The completion of a single project—Flevoland East polder—would add nearly 7 per cent of its present land area.

The Netherlands is an agricultural country although only 12 per cent of its active population is engaged in farming. It is a land of very intensive agriculture where yields are very high, both in relation to land and labour involved. It is the leading exporter of agricultural products in Europe. Nearly a third of the country's exports are derived from agriculture.

Nearly 45 per cent of its cultivated land is devoted to crops—wheat, oats, barley, rye, potatoes and sugar-beet. Market gardening, horticulture and tulip culture are the special features of its agriculture. The country exports large quantities of flowers prominent among which are tulip, daffodils and hyacinths.

The major part of its agricultural exports consists of dairy products famous all over the world. It leads the world in the export of condensed milk. It produced about 7 million

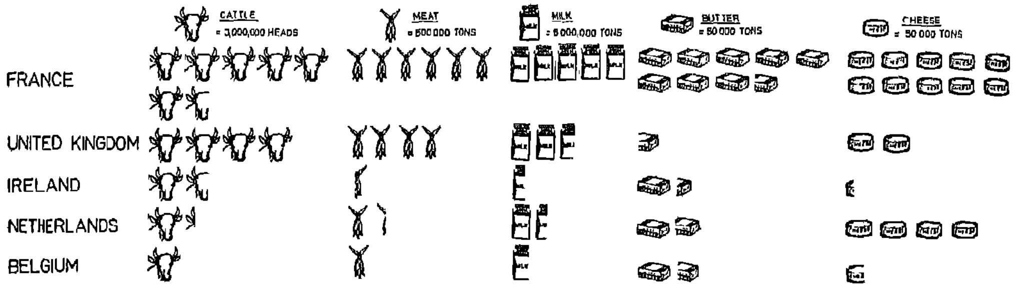

Fig. 65. Oceanic Europe—Cattle and Animal Products

Note the dominating position of France in all the items. Compare the per capita production of milk and butter in France and the Netherlands. What strikes you most about the position of Eire in these items ?

tonnes of milk, 90,000 tonnes of butter and 213,000 tonnes of cheese Very good grazing lands, long growing season, mild winters and cool summers, and a humid climate, are all responsible for the high yield of milk. The average yield of milk per cow is 4,230 kilogrammes per annum which is surpassed only by Israel where it is 4,480 kilogrammes Fishing is an important activity and canned fish is one of its export items.

The Netherlands is an equally important industrial nation It derives half of its national income from industries. The country has well developed metallurgical industry that has made progress only recently. It is the second largest exporter of electric bulbs, and produces a large variety of electrical goods of a high quality. The famous Philips Electrical Company belongs to the Netherlands. The country specializes in food processing. It imports a large variety of raw materials both agricultural and mineral and processes them for re-export. Its food-processing plants are taken as the models of efficiency. It has a big petroleum refining industry; the parent company of Burmah Shell is of Dutch origin Textiles and chemicals are the other important industries of the country. Food-stuffs, machinery and transport equipment are its major exports in terms of their value.

The Netherlands is very often referred to as a trading, transporting and brokerage nation Its location, a very good network of transport, especially because of the Rhine, its distributaries and canals all eminently suited for inland navigation, have made it a big trading nation It commands 6,500 kilometres of inland navigable waterways. The port of Rotterdam handled 102 million tonnes of goods in 1961, occupying the first position in Europe. It closely rivals New York in handling goods. The country has a large shipping fleet.

Amsterdam is the constitutional capital city of the country. But The Hague is the seat of its Government. The International Court has also been located here.

LUXEMBOURG

Surrounded by West Germany, France and Belgium, Luxembourg is a tiny nation with an area of 2,586 square kilometres. In 1964, it had a total population of 328,000 with an average density of 127 persons per square kilometre.

It is a highly industrialized nation deriving more than half of its income from industries. The iron and steel industry alone accounts for three-fifths of its industrial income. It imports coke and iron-ore and exports pig-iron and steel.

EXERCISES

Review Questions

1. Answer the following questions :
    - (*i*) By and large which are the countries included in Oceanic Europe ?
    - (*ii*) What is meant by Low Countries ?
    - (*iii*) Distinguish between the United Kingdom and Great Britain.
    - (*iv*) Name the two most important resources of the United Kingdom.
    - (*v*) What is the secret of very high agricultural yields in Europe ?
2. Give reasons :
    - (*i*) The countries of Oceanic or Western Europe are still among the leading trading nations of the world.
    - (*ii*) Rotterdam is the leading port of Europe and closely rivals New York in handling goods.
    - (*iii*) English Channel has been partly responsible for the importance of Great Britain.
    - (*iv*) Paris unfolds the story of France and reflects its glory.
3. Make correct pairs from the two columns :

(*i*) Emerald Isle.	France
(*ii*) A nation constantly at war with the seas	The United Kingdom
(*iii*) Europe in miniature.	Eire
(*iv*) A highly industrialized country having the densest network of railways.	Great Britain Belgium
(*v*) A former long time mistress of the seas.	The Netherlands

4. Complete each of the following statements with the most appropriate ending:
    - (A) The countries of Oceanic Europe depend heavily on international trade because
        - (*a*) these populous and agriculturally poor countries have to import almost all of their food requirements.
        - (*b*) they import agricultural and other raw materials and convert them into finished products for re-export.
        - (*c*) these highly industrialised countries have to import huge quantities of petroleum as they have no deposits of their own.
        - (*d*) they are all endowed with numerous natural harbours and possess large commercial fleets.
    - (B) The basis of the high density of population of Oceanic Europe lies in its
        - (*a*) favoured location in the land hemisphere.
        - (*b*) mining and industry.
        - (*c*) fishing and shipping.
        - (*d*) intensive mixed farming.
        - (*e*) temperate and equable climate.
5. Elaborate the following statements by giving suitable geographical facts along with your own comments :

   "Making the best use of the raw materials the people of this region were the first to bring about the Industrial Revolution".

6. Compare and contrast the natural resources of the United Kingdom and France.
7. How will you explain a very high density of population and comfortable standards of living in the countries of Oceanic Europe ?

Finding Out

8. Find out how and to what extent the Dutch people have been successful in reclaiming land from the sea.

Cartographic Work

9. Collect data on the production of coal, pig-iron, steel, installed capacity for electric power and show it graphically in respect of the United Kingdom, France, the Netherlands and Belgium Write a critical note of your own to go with your cartogram.

Picture Reading

10. Countries of Western Europe are among those that are highly industrialised in the world. Find out two important contributory factors in this regard after studying carefully the pictures No. 37, 38, 41, 42, 44, 46 and 50.

Films Available

(*i*) British Isles No. 914.2; 10 mins; English; D.T.A.
(*ii*) A Good Catch. No. 2299; 21 mins; English; B.I S
(*iii*) The Golden Guernsey No. 2153; 20 mins; English; B I.S.
(*iv*) Machines and the Farm. No. 2425; 32 mins; English; B.I.S.
(*v*) Steel. No. 1255; 35 mins; English; B.I.S.
(*vi*) British Locomotives. No. 1995; 21 mins; English; B.I.S.
(*vii*) Seawards the Great Ships No. 2190; 29 mins; English; B.I.S.
(*viii*) This Automation Age. No. 2536; 33 mins; English, B.I.S.
(*ix*) Paris and Versailles. No. 914.436, 15 mins; English; D.T.A.
(*x*) Contre-point (French Agriculture and Cattle Breeding). M-67; 22 mins; English; F.E.C.C.
(*xi*) 24 Heures de la Regie Renault (French-Automobile Industry); M-8; 27 mins; English; F.E.C.C.
(*xii*) Chateaux et Riveres (French Castles and Rivers). J-17; 21 mins; English; F.E.C.C.
(*xiii*) La Petite France (The Seine Valley). J-25; 19 mins; English, F.E.C.C.
(*xiv*) Faites vos Jeux (Central France). J-27; 21 mins; English; F.E.C.C.
(*xv*) De Terre et de Mer (All about Brittany). J-29; 20 mins; English; F.E.C.C.
(*xvi*) Fabulous Marseilles. No. 914.4; 11 mins; English; D.T.A.
(*xvii*) Land Behind the Dikes (The Netherlands). No. 914.92; 20 mins; English; D.T.A.
(*xviii*) Belgium. No. 914.93; 22 mins; English; D.T.A.

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CHAPTER 9

Southern Europe

SOUTHERN Europe is Mediterranean Europe both by location and climate. It consists of the three large peninsulas penetrating deep into the Mediterranean Sea. They are the Iberian Peninsula on the west, the Apennine or Italian Peninsula at the centre and the Greek Peninsula on the east.

Climate is the major factor that lends unity to this region. The annual cycle of hot, dry summers and mild, rainy winters is common to all these lands. The natural vegetation consists of broadleafed, evergreen trees with dark foliage, shrubby bushes and scrubs. They are all adapted to long, dry spells.

The preference for a hoe in place of a plough indicates the intensive nature of farming involving the maximum use of human labour. Small farms, very often of a garden size and uneven nature of the terrain preclude the possibility of a large-scale mechanized farming. Fruit gardening and tree cash crops dominate the pattern of agriculture. The problem of land erosion on a large scale is faced by these countries.

Uneven distribution of population is a striking feature of Mediterranean Europe. The high concentration of population in coastal plains and river valleys is in sharp contrast with vast spaces which are very sparsely populated.

THE IBERIAN PENINSULA

The Iberian Peninsula occupies the most south-westerly position on the continent of Europe.

The credit of discovering the "New World" or the Western Hemisphere very largely goes to the hardy seamen of this area. Christopher Columbus, the Italian born seaman, was the great Spanish explorer It is mainly the Spanish and the Portuguese who have shaped the Latin America of today.

Only a narrow stretch of water—the Strait of Gibraltar, barely 13 kilometres wide—separates this high plateau of Iberia from the African continent. Serving as a land bridge between the two continents, the people of this peninsula and those of north-western Africa have been considerably influenced by each other. The topography and climate of the two regions also show considerable similarities between the two.

Surrounded by the sea on three sides and cut off from the rest of Europe by the lofty mountain wall of the Pyrenees, the Iberian Peninsula is a sub-continent in itself. This block of land,

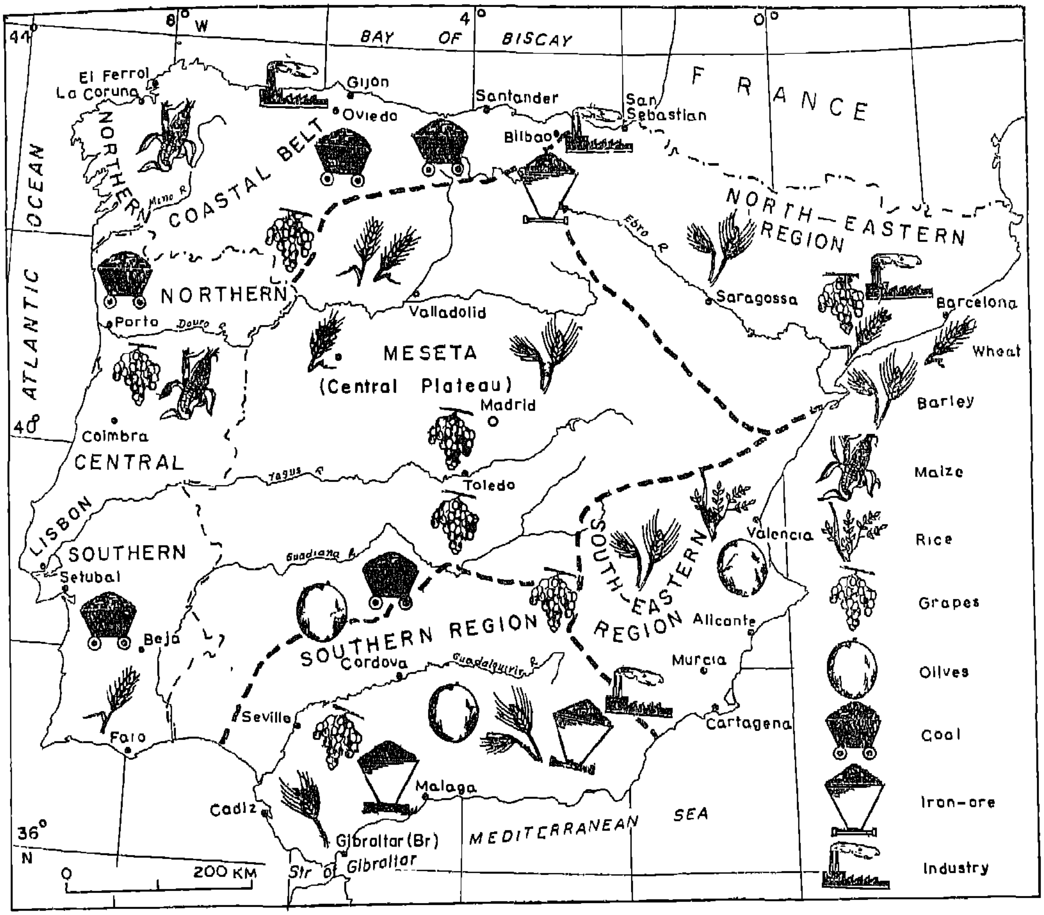


Fig. 66. The Iberian Peninsula—Physical Divisions and Economic Activities

Note the physical divisions of the Iberian Peninsula How do Spain and Portugal differ from each other in respect of size, orientation and relief ?

made of ancient massif, has predominantly continental characteristics.

SPAIN

Spain occupies the major portion of the Iberian Peninsula, separating the Mediterranean Sea from the Atlantic. It has an area of about one-sixth the size of India.

Separated by a formidable barrier of the Pyrenees, Spain and France present sharp cultural contrasts. Although the Pyrenees lend Spain the national unity, its topography and climate make Spain a mosaic of lands and peoples Very often geographers speak of two Spains—one "damp" and the other "dry". "Dry Spain" is the one that enjoys the Mediterranean climate as against "Damp Spain" experiencing the oceanic climate.

Mediterranean Spain is larger than the oceanic Spain. It is also more prosperous and populous. The country as a whole is not very rich in its resources, and has a population density of 62 persons per square kilometre.

Physical Setting

The broad physical regions of Spain are: (*i*) the northern coastal belt, (*ii*) the central plateau or *Meseta*, (*iii*) the north-eastern region, (*iv*) the south-eastern region along the Mediterranean Sea, and (*v*) the southern region

Lying along the Atlantic Ocean and the Bay of Biscay, the northern coastal belt is a mountainous region with fertile river valleys. Large areas are covered with pastures and forests

The central plateau of Spain, also known as Spanish Meseta, is the hard and rocky core of Spain. Its average altitude is over 600 metres above sea level. The rivers Douro, Tagus and Guadiana drain the plateau before they enter Portugal on their way to the Atlantic into which they fall.

The north-eastern part of Spain, flanked by the Pyrenees on the north and the Spanish Meseta on the south, is drained by the River Ebro.

The south-eastern coastal belt along the Mediterranean is narrow as the mountains descend almost to the sea along the coast. The region is known as Levante.

The southern and south-western Spain is mountainous except for the deep and fertile valleys. The flat and fertile plain of the River Guadalquivir is the largest of all.

The climate of Spain is extremely varied. The northern coastal region enjoys a cool and humid oceanic type of climate. The average rainfall in this region is approximately 100 centimetres and is well distributed over the year.

The central plateau of Spain has a continental type of climate with a marked range between summer and winter temperatures. The region has very cold winters and hot summers. The region is known for its aridity with the rainfall of less than 40 centimetres per annum.

The climate along the Mediterranean coast is temperate except in summer, when temperatures occasionally shoot up to 40°C. This is a region of summer droughts and winter rains, with the rainfall varying from 40 centimetres to 80 centimetres per annum.

The variety of climates is naturally reflected in the natural vegetation of Spain. The humid areas of northern Spain abound in deciduous trees and drought-resisting shrubs dominate the dry southern region. The typical vegetation of the Meseta and Andalusia is the steppe type of grasses.

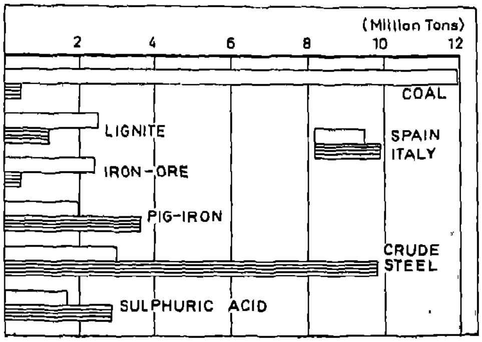
Economic Development

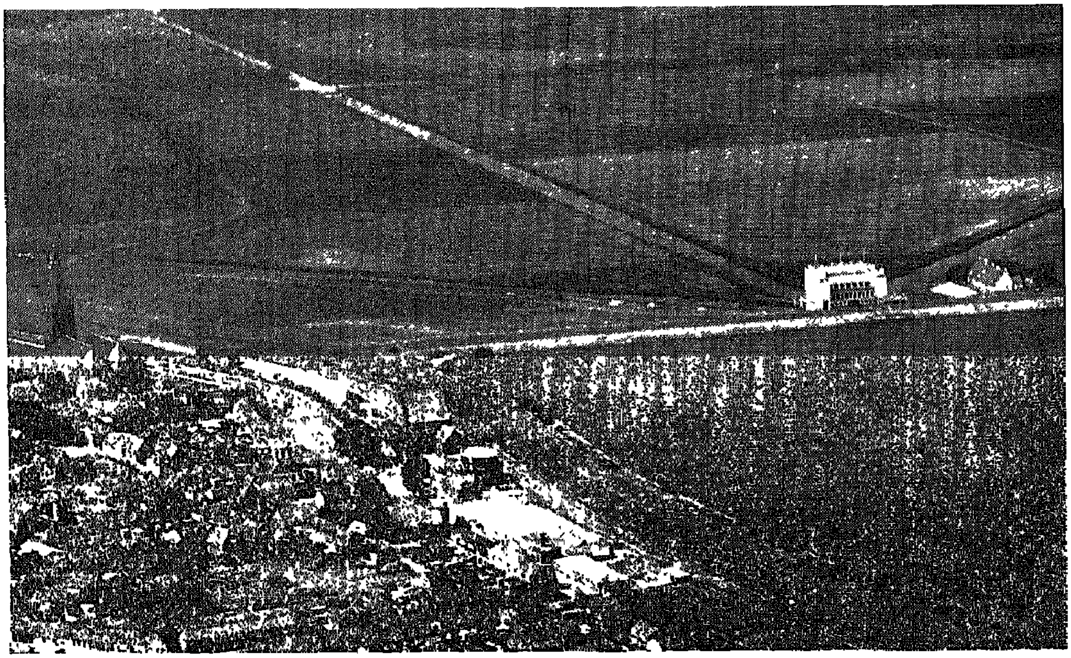
Agriculture, livestock and mining are the major natural resources of Spain. Nearly two-fifths of its land is under cultivation. About three-tenths is under permanent pastures and meadows, whereas a little over a fifth is left under forests.

Agriculture is important as about 48 per cent of the total population is engaged in it. The country produces the cereals such as wheat, barley, maize and rice. It produces potatoes, sugar-beets, cotton and tobacco as its cash crops The country is the largest producer of olives and olive oil. With a big and widespread crop of raisins the country is an important producer of wines.

Fig. 67. Minerals and Industrial Products of Spain and Italy

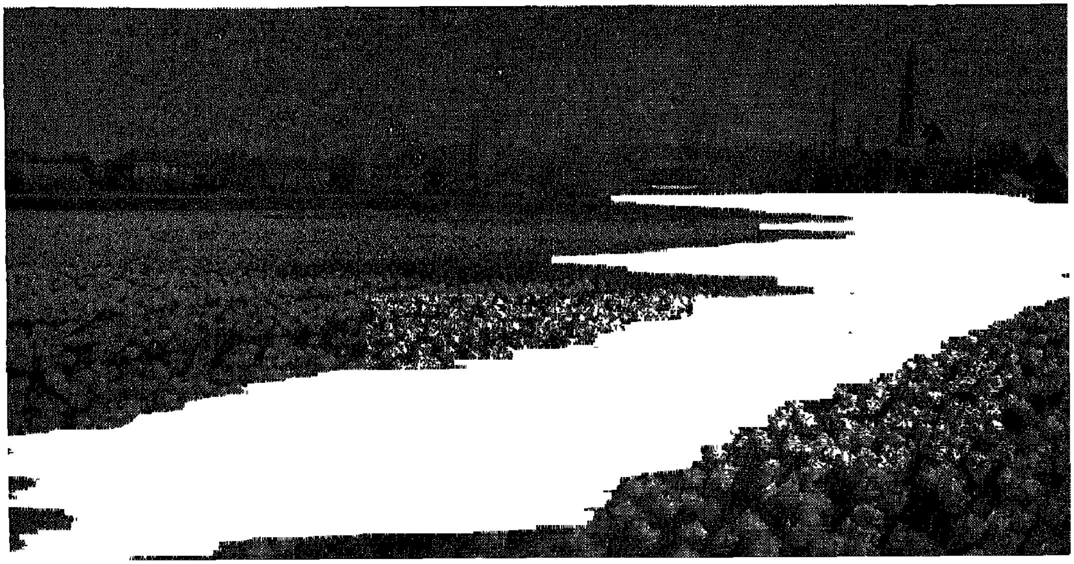
Compare the position of the two countries in raw materials and manufactures. Which of the two countries is rich in raw materials ? What conclusion can you draw about the stage of industrialization in the two countries ?





48. Polder Lands in the Netherlands *(Courtesy · Embassy of the Netherlands, New Delhi)*
These lands have been reclaimed from the Zuider Zee by constructing protective dykes. These lands are best suited to cultivated grasses which in turn support a flourishing dairying industry. Agriculture exports led by dairy products constitute nearly two-fifths of the country's total exports. Why is the Netherlands called "a country at war with the sea"?

49. Tulip Fields in the Netherlands *(Courtesy · Embassy of the Netherlands, New Delhi)*
The country is famous for its bulbs—mainly tulips followed by hyacinths, daffodils, narcissus and crocus. Tulip culture is concentrated mainly around Amsterdam whence they are flown to the markets of London and Paris. Nearly 4 per cent of the arable land is devoted to flower growing.

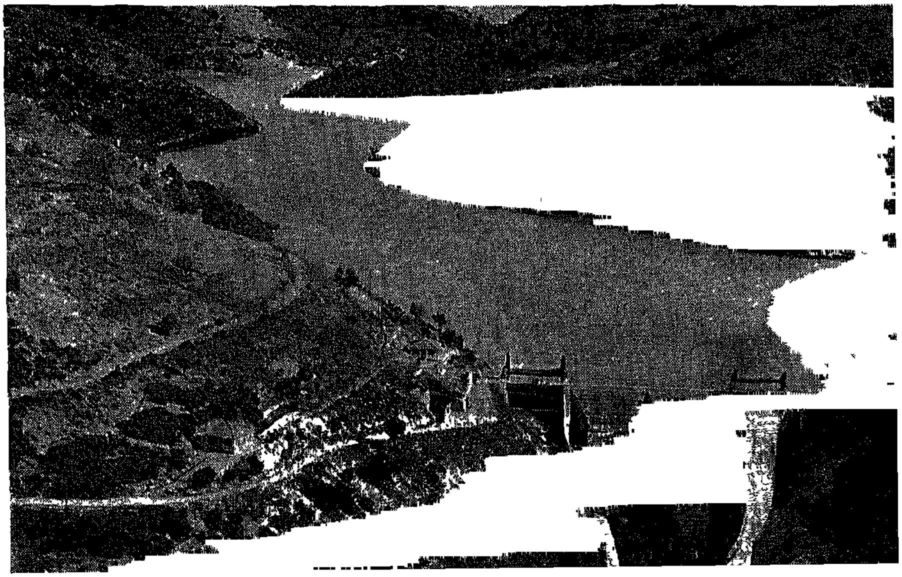


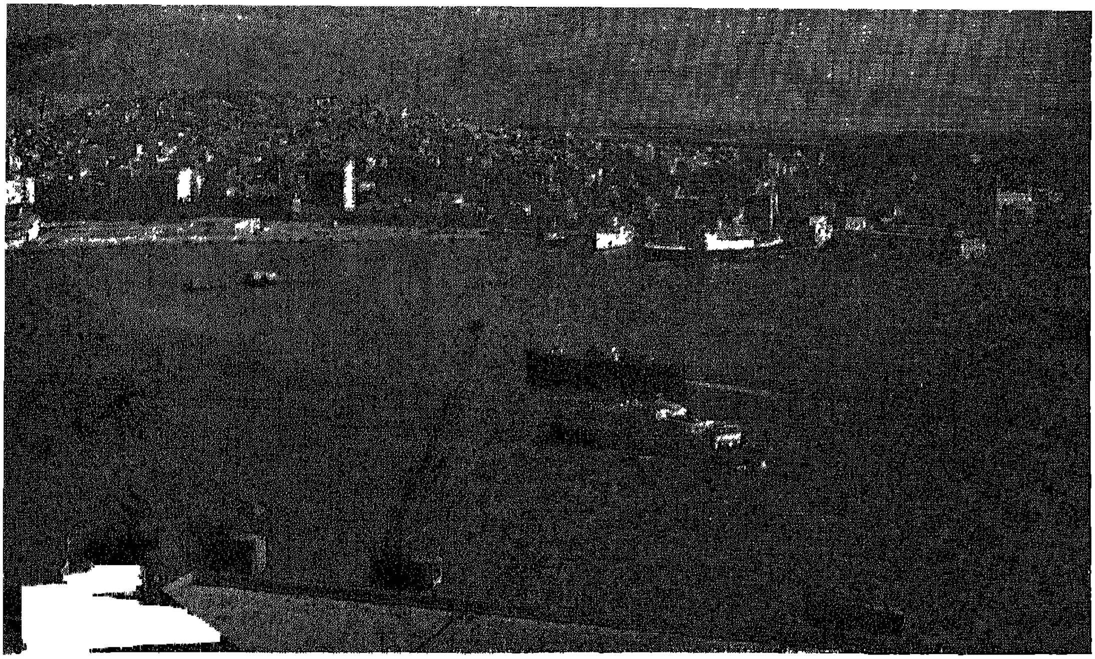
50. An Aerial View of Amsterdam *(Courtesy: Embassy of the Netherlands, New Delhi)*

Amsterdam is the capital city of the most densely populated country of Europe. Occupying the fertile delta of the Rhine, the country has developed into a trading, transporting and brokerage nation. See the numerous canals crisscrossing the city. What does it suggest? Why is it often called the banking and financial capital of Europe?

51. A Water Reservoir in Greece *(Courtesy: Embassy of Greece, New Delhi)*

With the help of such new dams, Greece has been increasing its water-power resources in order to increase its industrial tempo. Note how badly the hills have been eroded. How can this trend be reversed?



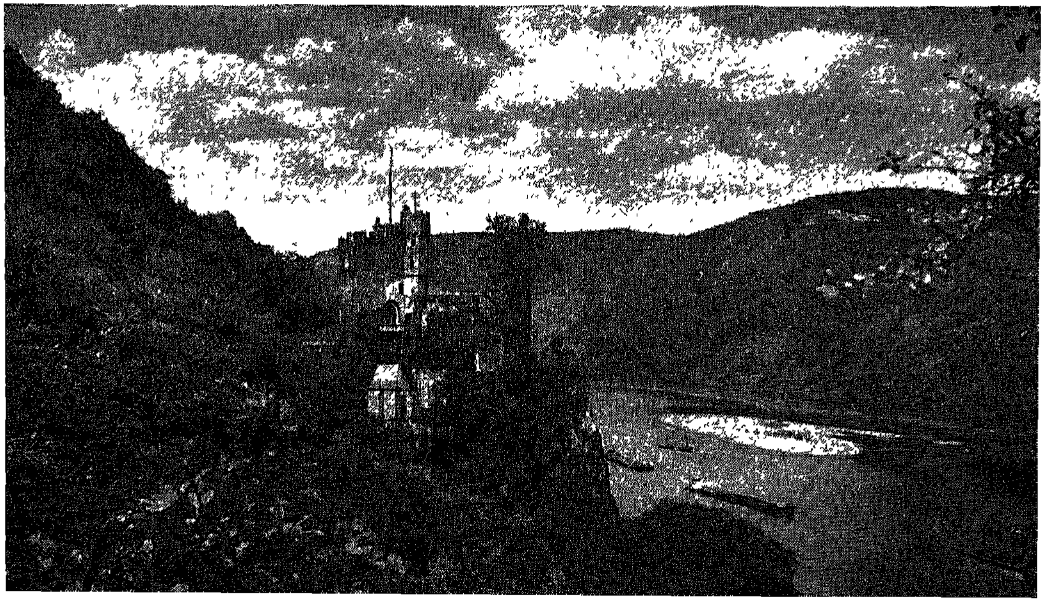


52. Piraeus Port of Greece *(Courtesy · Embassy of Greece, New Delhi)*

This port city of Athens accounts for 70 per cent of the country's imports, 40 per cent of its exports and 90 per cent of the passenger traffic. With over 7 million tonnes of registered shipping tonnage, Greece is one of the important maritime nations of Europe Note the deforested and badly eroded hills in the background

53. The Rhine Flowing through the Rift Valley in West Germany *(Courtesy. Landesbildstelle Rheinland—Pfalz at Koblenz—Ehrenbreistein)*

Note the forested slopes of the hills and barges plying on the river. What does the old castle on the bank of the river indicate? What makes the Rhine the busiest inland waterway of Europe?

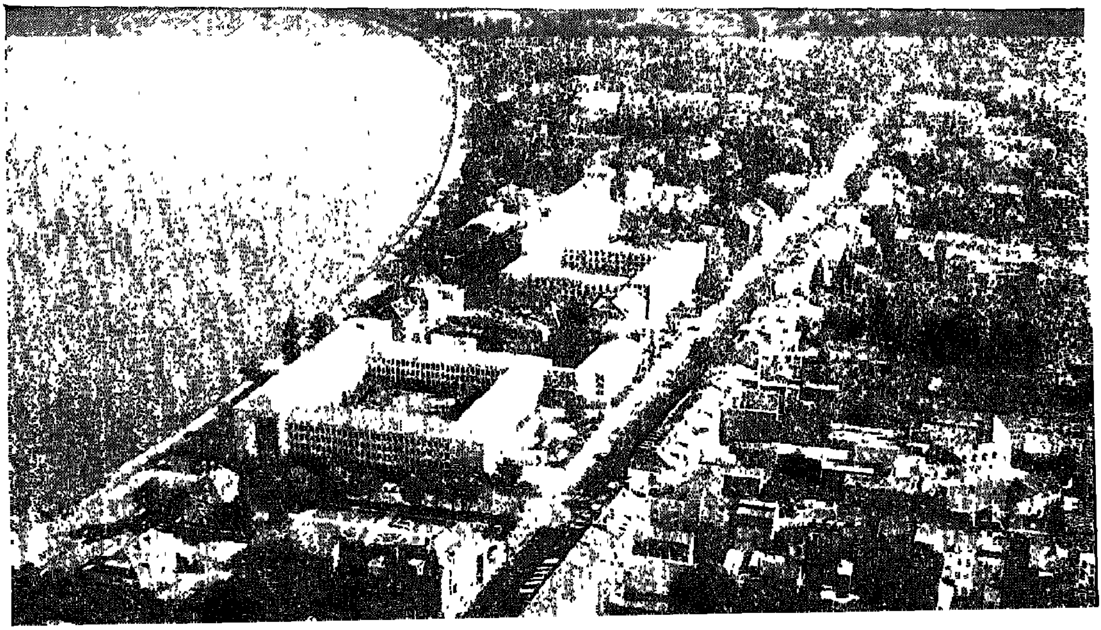


54. Industrial Area near Dortmund, West Germany *(Courtesy : Embassy of the Federal Republic of Germany, New Delhi)*

Dortmund is one of the industrial, mining and commercial cities in the Ruhr. This important rail-road centre is also connected with the North Sea by Dortmund-Ems Canal It manufactures steel-rails, machines and metal plates. What has made the Ruhr Valley a heart of industrial Europe?

55. Bonn, the Capital City of West Germany *(Courtesy · Embassy of the Federal Republic of Germany, New Delhi)*

The small city situated on the western bank of the Rhine is an educational and manufacturing centre. It is now the capital city of the Federal Republic of Germany Note its water front, buildings lining the well-kept streets, and traffic signs on the road. How did this city become the capital of West Germany ?

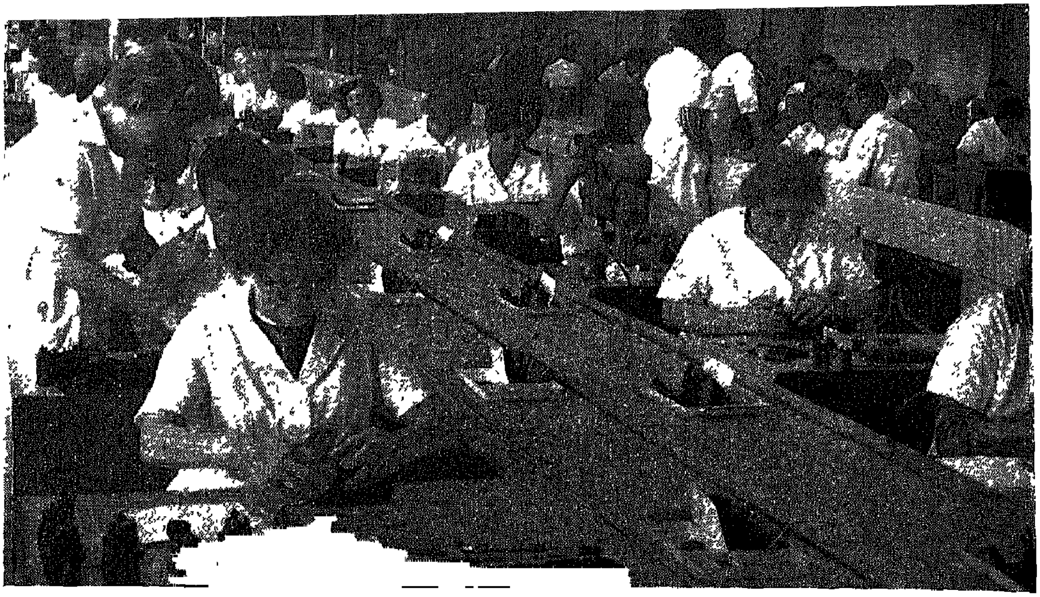


56. The Heart of West Berlin *(Courtesy. Embassy of the Federal Republic of Germany, New Delhi)*

This is a view of what is known as "Europe Centre" in Berlin and has been built of glass, steel, aluminium and cement. The old church reminds us of the city that was virtually razed to the ground during World War II. Note an 84-metre high skyscraper on the left. Do you see in the picture an overbridge for the pedestrians?

57. A Sugar-beet Harvester in Operation in East Germany *(Courtesy: Trade Representation, German Democratic Republic, New Delhi)*

East Germany produces about 5 million tonnes of sugar-beets annually. Note how the beets are dug out, lifted and separated, all with the help of machines. Why do European countries consume more of beet-sugar than cane-sugar?

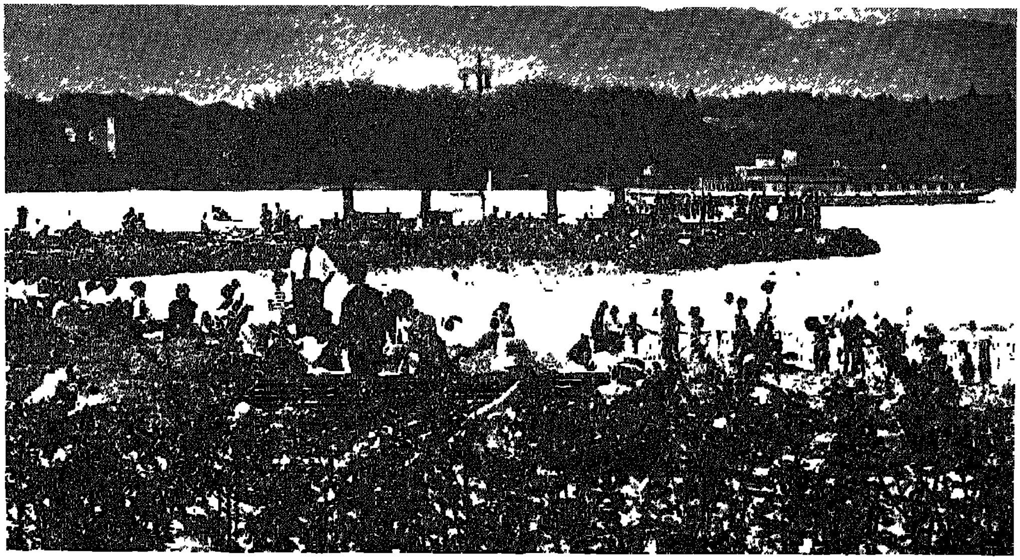


58. Assemblying Cameras in East Germany *(Courtesy: Trade Representation, German Democratic Republic, New Delhi)*

In this state-owned factory a complete camera is assembled every 90 seconds. The country is an important producer and exporter of optical goods including the cameras. Note how women are doing this highly skilled job.

59. Transhumance in the Swiss Alps *(Courtesy: Embassy of Switzerland, New Delhi)*

With cool humid climate and nearly 43 per cent of its land area under pastures, dairying is an important industry in Switzerland. Annually it manufactures 70,000 tonnes of cheese and 35,000 tonnes of butter. Note the dresses of cowherds and big bells hanging around the necks of the cows What is transhumance?

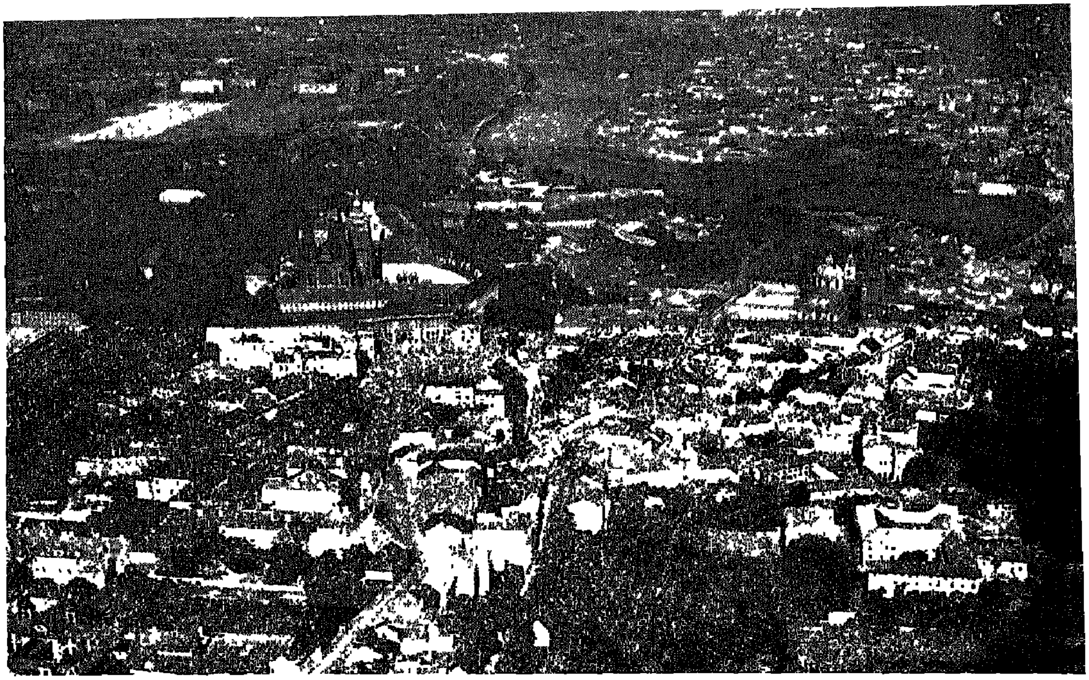


60. Tourists at Lake Geneva, Switzerland *(Courtesy: Embassy of Switzerland, New Delhi)*

Switzerland, a tourists' paradise in Europe, is known for its hospitality and efficient hotel industry. With nearly 8,000 hotels it has over 280,000 beds mostly for its tourists—skiers, swimmers, hikers, mountaineers and convalescents. Why do the Swiss care so much about their tourists?

61. Return of the Cattle from Alpine Pastures in Austria *(Courtesy: Embassy of Austria, New Delhi)*

Summer is over, and the cattle are returning from the Alpine pastures into the native stables This is a little festive event and hence the cattle are adorned with flowers, garlands and pictures. The little bells around their necks announce the return of the cattle into the villages.



62. An Aerial View of Prague *(Courtesy: Embassy of Czechoslovakia, New Delhi)*

This old river town in Bohemia is the capital city of Czechoslovakia. It is a commercial and industrial centre and is known for its manufactures such as textiles, chemicals, paper, glass and machinery. Note the bridges connecting two banks of the river.

63. A Mountainous Countryside in Yugoslavia *(Courtesy: Embassy of Yugoslavia, New Delhi)*

Note how small and irregular fields have been carved out in this rocky and mountainous region not far from the Adriatic coast. Also note the highly eroded hill slopes. Why are the settlements in this region small and widely scattered?

Livestock is another important resource of the country. In 1964, the livestock wealth of the country consisted of 20 million sheep, 6 million pigs, 3.7 million cattle, and 2.7 million goats. Its fish catch was 1.1 million tonnes, one of the largest in Europe.

Coal and lignite, iron-ore, sulphur, zinc and lead are the major mineral resources of Spain. This country is one of the important exporters of iron-ore. With the production of over a million tonnes of sulphur in 1964, it ranks high in the production of this strategic mineral, indispensable in chemical industries. Spain now leads the world in the production of mercury. Besides coal and lignite the country has fairly good potential water-power resources.

In recent years the country has been making progress in industries. Its major industries are iron and steel, chemicals and textiles. In 1964, it produced 2 million tonnes of pig-iron and 3 million tonnes of crude steel. It has now small ship-building and automobile industry.

Spain produced 1.4 million tonnes of sulphuric acid and 400,000 tonnes of paper in 1964.

Regions of Spain

Northern and north-western parts of Spain along the Atlantic Ocean are a heavily wooded mountainous region with small plains and low valleys. The coastline has good natural harbours, suitable for fishing. Iron, zinc and coal are mined in this area. The major iron and steel plants are located at Bilbao.

The Meseta or the central plateau of Spain is a dry, dusty area with a monotonous vegetation comprising small tufts of shrubs and grasses. The skyline is occasionally broken by scattered trees or bushes and aridity is the keynote of the region. The southern Meseta is called *La Mancha*—"the dry land". Flocks of sheep, raising clouds of dust while moving from one pasture to another, is still a common sight. This is the heart, a hard core, of Spain, arid, infertile and sparsely peopled.

Madrid, the capital city of Spain, stands at the centre of the Iberian Peninsula. Today it has grown into the largest city of Spain mainly because of its central location. It is the centre of political and intellectual life of the country and a hub of its transport. The old Spanish proverb which says "The desert begins at the gates of Madrid" still holds good. Toledo is an old city which is said to be the museum of history, art and religion of Spain.

The northern *Meseta* is a rolling, semi-arid, grassy plateau. Irrigated fields and a few old towns are scattered in this region.

The north-eastern part of Spain, drained by the Ebro into the Mediterranean region, is a steppe region With a few pockets of irrigated agriculture and orchards, the region is most rural in character.

The coastal lowland of Catalonia is one of the most important parts of Spain. It is an important industrial region with a large proportion of the population being engaged in industry. The region is supplied with hydro-electricity from the high valleys of the Pyrenees on the north. Its irrigated coastal lowlands provide considerable food supplies for the industrial cities of the region. Bark of the cork oak is the cash crop of the region. Towering stacks of bark, ready for shipment is rather a familiar sight.

Barcelona is the great port of Spain situated in this region. Among the Mediterranean ports it is surpassed only by Genoa in Italy and Marseilles in France. There are textile, chemical and metallurgical industries located in and around the city. As an important intellectual and economic centre of the country, it rivals Madrid, the capital city of Spain.

Valencia is the famous city of Spain known for its orange groves and orchards. Malaga in the far south is renowned for its sweet wines. It is an important producer of raisins rivalled only by Corinth in Greece. Cartagena is a naval centre and is also known for several mines in its vicinity.

The marshy delta of the Guadalquivir opens the way to the lowlands of Andalusia, north-west of Gibraltar. The region resembles the

North African desert both in climate and topography. The Betic Mountains are a source of water for irrigating these semi-arid lands. Corn, olives, oranges, vegetables and flowers are grown on irrigated lands—the oases of the region. The region was held by the Moors, people belonging to North Africa, for a long time. The agricultural practices, architecture and place names still remind the influence of Arabic and Islamic culture in this part.

Copper, lead, silver and mercury are mined in the neighbouring mountains. Seville, a river port, is the principal city of the region since the days of the Roman Empire.

GIBRALTAR

The Rock of Gibraltar is a sea fort commanding the gateway to the Mediterranean Situated on the northern shores of the narrow Strait of Gibraltar it controls the entrance to the Mediterranean from the Atlantic Ocean and *vice versa*. This small territory of 6 square kilometres on the Iberian Peninsula has a British naval base Rising sharply to 425 metres above sea level, the Rock of Gibraltar is a shrub covered mass of limestone with huge caves.

This well-equipped commercial port possesses repair yards and dry docks. It has a population of 24,000. Tobacco and coffee processing are important industries in addition to fish and fruit canning. It is also an attractive centre for tourists.

PORTUGAL

Portugal occupies the south-western part of the Iberian Peninsula. It is approximately as big as the State of West Bengal.

Bounded by the Atlantic Ocean on the west and south, the country has a leeward location and a seaward outlook, unlike Spain. Its low relief and sheltered valleys stand in contrast to the Plateau of Spain.

Portugal possesses meagre resources for its population of about 9 million with a density of 98 persons per square kilometre The country depends heavily on the sea and its overseas territories, namely, Angola and Mozambique. This sea-faring nation has produced the great seamen like Bartholomeu Dias, Vasco-da-Gama and Ferdinand Magellan. Brazil, the largest State in Latin America, has been shaped by Portugal and uses Portuguese as its official language.

Physical Setting

Portugal is a land of sharp topographic and climatic contrasts Northern Portugal is a mountainous country enjoying the oceanic climate. With abundant rainfall, the country is heavily wooded The farming is handicapped by severe cold, largely due to high elevation. Whereas the plateau region is sparsely peopled, the coastal lowlands are densely settled and intensively cultivated. The landscape is dominated by the unbroken succession of vineyards along the valley slopes The port of Porto is well known for the export of sweet wines named after it.

Central Portugal represents a transition zone from the Oceanic North to the Mediterranean South. In central Portugal open, dry grasslands with groves of cork and other oaks are fairly common. The Tagus Valley is the best farming region of Portugal. This agricultural heartland produces corn, wheat, olives and fruits including grapes.

Southern Portugal is relatively a lowland, having the typical Mediterranean climate. Its vegetation consists of steppe-like grasses and the evergreen brush The land becomes progressively drier as one proceeds southwards. Islamic influence is easily seen in this part.

Economic Development

Nearly 47 per cent of the land is cultivated and 28 per cent is under forest. It is estimated that about 16 per cent of the total land is potentially productive but lies unused Nearly 42 per cent of the total population is still engaged in agriculture.

The country produces potatoes, wheat, maize and some rice. Grapes, raisins, figs, almonds and olives are its important fruit crops. Agriculture is practised in a traditional way where fields being ploughed by six or seven pairs of bullocks is not an uncommon sight.

The country is a leading producer of cork. Its total fish catch is about half a million tonnes Cork, sardines and wines are the traditional exports of Portugal.

Sheep rearing is an important pastoral activity. The country possesses 5 million sheep and produces considerable raw wool.

It produces some iron-ore and sulphur. It now manufactures some pig-iron and crude steel The country has a fairly good textile industry. Prominent among the manufactures of the country are glass-ware, pottery, fish, wines and olive oil.

Situated on the wide estuary of the Tagus, Lisbon is a sheltered harbour and a spacious port This beautiful and colourful city of Europe is a busy river port. It is situated on steep hills overlooking the Tagus. Lisbon has now become an important centre of international air traffic, mainly because of its location in the extreme south-west of Europe.

ITALY

Situated at the centre of the Mediterranean Europe, Italy is one of the leading centres of ancient European culture and civilization. It stands next only to Greece in this regard The Roman Empire was a supreme power of the Mediterranean region. The Roman law, the Roman system of administration and Roman roads are among the important contributions of ancient Italy.

Geographically, Italy is a land of contrasts, very similar to India. Like Spain, Italy also consists of two entities—Northern Italy and Southern Italy. Northern Italy is continental in location and climate; and the Southern is peninsular and Mediterranean.

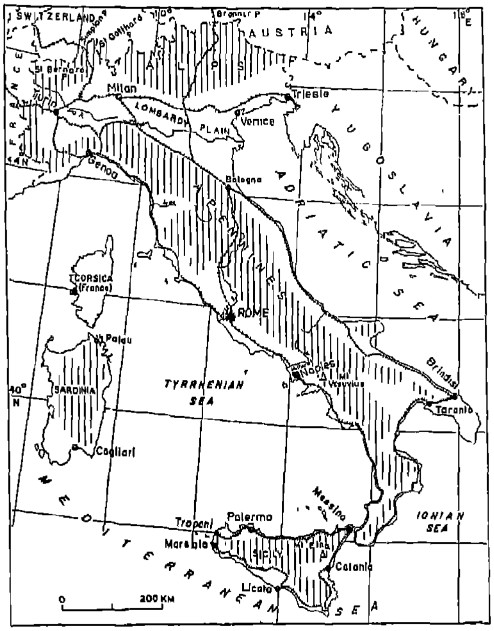


Fig. 68. Italy—Relief and Transport

Note the relief features and the major lines of communication in Italy. In what ways are the major physical divisions of Italy similar and dissimilar to those of India ?

It is as large as the State of Maharashtra Its total population in 1964 was slightly more than 50 million, with the average density of population of 168 persons per square kilometre.

Physical Setting

With the rampart of the Alps along the northern frontiers, the extensive and fertile plains of the Lombardy in the north, and the hilly Apennine Peninsula of the south, Italy has a striking similarity with the basic structural and topographic features of India.

A thousand kilometre long Alpine boundary in the north generally follows the crestline of the Alps between Switzerland and Italy. Formidable though they are, the Alps provide natural

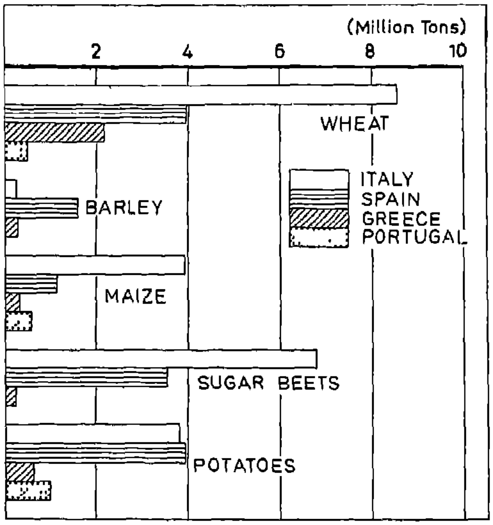


Fig. 69. Agricultural Produce of Southern Europe

Note that Italy is a leading producer of wheat, maize and sugar-beets among these countries. It also produces some rice. Find out the favourable factors in this regard.

passes through which Italy has been able to maintain contacts with the rest of Europe on the north. The Simplon, St. Bernard, St. Gotthard and Brenner are the major passes, through which railways connect Italy with the rest of Europe.

The plain of Lombardy, also known as the valley of the Po, is at the head of the Adriatic depression that has now been filled up with alluvium brought down by the Po and its tributaries from the Alps Occupying only one-sixth of the total land area, it forms the agricultural and industrial heartland of Italy, enclosed by the rim-like formation of the Alps on the north and the Apennines on the south. The Po Delta is still actively extending itself against the narrow Adriatic Sea

The Apennines in the south form the backbone of southern Peninsular Italy. Vesuvius (1,176 metres) is the only active volcano of Italy. The mountains are fairly high and rugged and the region is difficult of access. The coastal plains are small with narrow river valleys. Naturally these are the most densely populated parts

Sicily, a continuation of the Apennines, is separated by narrow and shallow waters of the Strait of Messina. The island is hilly and rugged, except for the plain of Catania. Mt. Etna is the famous volcanic peak. Sardinia, another important and big island of the Mediterranean, is also mountainous with fertile plains in the south and north.

Peninsular Italy enjoys the typical Mediterranean climate. The average rainfall in the south is 50 centimetres. The Po Valley has a modified continental climate. The precipitation is fairly well-distributed over the year with spring and autumn maxima. The seasonal range of temperature is also marked and wide, because of cold winters and hot summers. The average rainfall in the Po Valley and in the Alps is 200 centimetres per annum.

Economic Development

Italy is one of the densely peopled countries of Europe. As only one-fifth of the total land area consists of plains, there is enormous pressure of population on agricultural land, a primary resource.

About 53 per cent of the total land area is under cultivation. Besides plains and valleys, almost all the hillsides are intensively cultivated. Terraced farms are common both in the Apennines and in the Alps. Nearly 17 per cent of the land is left under permanent meadows and pastures, the major portion lying in northern Italy About 20 per cent of the land is under forests.

Agriculture provides employment to 25 per cent of the active population. In 1948 this percentage was about 45. During this period the total agricultural production has been steadily increasing.

The country in 1961 had launched a comprehensive agricultural five year plan known as Green Plan. The object of the plan was to improve agricultural productivity, raise farm

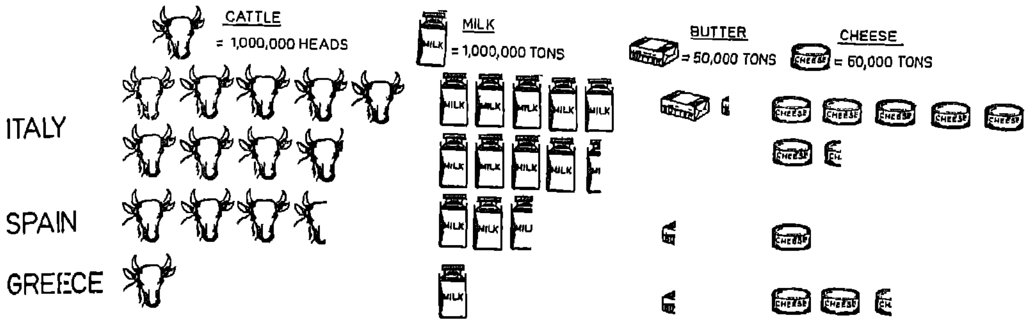


Fig. 70. Cattle and Dairy Products in Italy, Spain and Greece

Note that dairying is practised in Italy on a very large scale. Compare the positions of Spain and Greece in respect of cattle, milk and cheese. How will you explain the greater emphasis on the production of cheese and butter in Greece ?

employment and income, increase mechanization and bring about a better land redistribution.

Being a densely peopled land, Italy is a cereal-producing country. Nearly a fifth of its total cultivated land is planted in wheat—a typical Mediterranean grain. It is produced most heavily in the Po Valley. Maize is also now becoming increasingly important. In 1964 Italy produced 8.1 million tonnes of wheat and 3.7 million tonnes of maize. Its production of rice, potatoes and sugar-beets is considerable.

Italy is also a large producer of tomatoes, olives, apples, peaches and grapes. With 11 million tonnes of grapes produced in 1964, it closely rivals with France. So is the case with its wine production.

Animal husbandry is a significant part of agriculture. In 1964, it had 9.1 million cattle, 7.8 million sheep and 4.8 million pigs. In northern Italy dairying is more developed than elsewhere.

The important manufactures depending upon agricultural produce are wines, sugar, olive oil, tobacco products, and textiles.

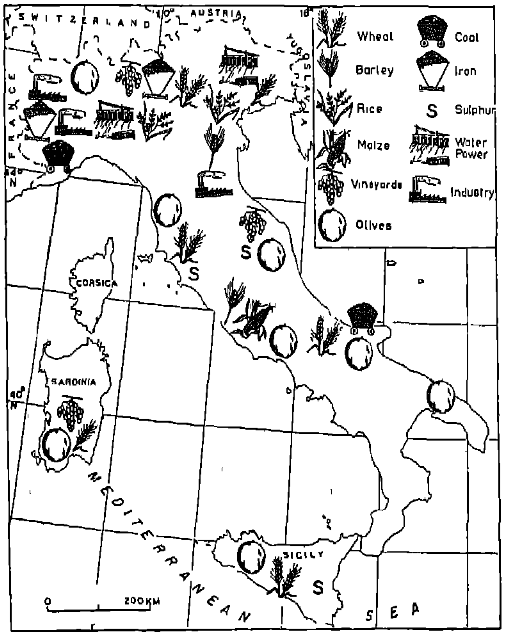
The forest resources of Italy are limited and the country has to import part of its timber requirements. Soil conservation and afforestation are being undertaken as programmes of the State.

Italy is poor in mineral resources. Yet, the country meets its requirement of bauxite, pyrites, asbestos, lead, zinc and sulphur locally. It is a leading exporter of mercury.

Poor as it is in local coal, lignite and mineral oil, the country depends heavily on its rich water-

Fig. 71. Italy—Economic Activities

Note the major crops and their distribution. The Plain of Lombardy in northern Italy is the most densely populated part of the country. What makes it so ?



power resources. Of its total installed power capacity of 21 million kw. in 1964 nearly two-thirds of it was water-power.

Since World War II, Italy has made rapid progress in industry. Between 1953 and 1961 the country doubled its industrial production, and contributed 45 per cent of the total national income Iron and steel industries have become very important. In 1964, the country produced 3 6 million tonnes of pig-iron and about 10 million tonnes of crude steel; the well-developed automobile industry, produced 1 million motor cars, mainly the popular Fiats, and 60,000 commercial vehicles. It also builds ships and tankers.

Its chemical industry is equally developed. In 1964, it accounted for 2 8 million tonnes of sulphuric acid alone, the other important commodities produced were paper, newsprint, rayon and acetate fabrics

Textiles are yet another important item of its manufactured goods.

Regions of Italy

The Alps play an important role in the economic life of Italy. The glacial lakes are the source of its white coal, the hydro-electricity They also help to store water for irrigation down below. The Italian lake district is milder than the plains below as it lies on the warm and sunny south-facing slopes It, therefore, attracts tourists especially in winter

The level land, fertile soils, availability of water for irrigation, ease of transport and favourable climate make the Po Valley one of the great agricultural plains of Europe. The economic focus of Italy lies on these fertile agricultural lands. It is the most prosperous and densely peopled part of Italy. Wheat, rice, alfalfa, vegetables and hemp are the main crops. Each field is surrounded by rows of fruit trees. Generally a trellis covered with grapes fills the space between the trees.

The Piedmont region in the west offers good grazing ground for cattle and sheep Some of its best vineyards are in this region. It provides a quarter of Italy's water-power. The automobile industry of Italy is located in Turin

The plain of Lombardy in the north central part is the wealthiest part of Italy, most intensively cultivated. Besides cereals, dairying and sericulture are also important. Milan is the largest city of Lombardy and the whole of northern Italy. Situated at the junction of two routes passing through the Simplon Pass in the north-west and the St. Gotthard Pass in the north, it is connected with all other parts of Italy. It is a financial and commercial centre. Metallurgy, chemicals, electronics and textiles are the chief industries of the region.

The Venetian area is a lowland drained by the Po and other rivers flowing from the Alps into the Adriatic Sea. The Brenner Pass is the major natural route across the eastern Alps to Austria and Germany. Venice is an important port of North Italy. It was the greatest trading centre of medieval Europe. It now possesses the largest oil refinery in Italy.

The southern peninsula presents an altogether different picture. Irrigated fields in the valleys, terraces along the hillsides and small towns built on steep and rocky slopes characterize this region.

Along the Gulf of Genoa lies a small coastal plain between the Alps and the Apennines. Palms, flower gardens, olive trees and vineyards grow in this sheltered region enjoying a mild climate. Genoa is a leading port of Italy, well connected with its hinterland—the agricultural and industrial region of the Po Valley. It is a centre of ship-yards, steel mills and engineering industries.

Tuscany, further south, is another lowland with Florence as an old centre of arts and learning. It is a "museum town" of Italy. Marble, magnesite and mercury are the mineral deposits worked in this region. Wheat, corn and tobacco are the important crops. Iron is found in the island of Elba not far from the mainland.

Rome, the capital city of Italy, is the political and intellectual centre of ancient Europe. Its grandeur is almost unsurpassed. Innumerable churches and old ruins dominate the landscape. The Vatican City, a temporal State, ruled by the Roman Catholic Pope makes Rome the most important religious centre of the Catholic Church. It is the Mecca for the Roman Catholics all over the world. Today it is also the headquarters of the Food and Agricultural Organization of the United Nations. The city is situated on the lower Tiber. Wheat fields, olive trees, gardens and orchards surround the city.

The Naples region is the core of the south-west peninsula. The Apennines are very close to the sea. With Mt Vesuvius in the background, Naples is one of the beautiful cities of the Mediterranean. It is the third city and an important port of Italy. It is famous for citrus fruits

Sicily was once the leading producer of sulphur The mountainous island has a few small coastal plains densely settled by farmers, shepherds and fishermen. Palermo the largest city is surrounded by orange groves, olive trees, orchards, and vegetable and flower gardens. Wheat is grown on the interior plateau.

Sardinia another mountainous island is known for its mineral wealth—lignite, lead and zinc. The low plains are settled by herdsmen, farmers and fishermen.

MALTA

The three Maltese islands situated at the crossroads of the Mediterranean occupy a strategic position They now form an independent state with a total population of 328,000. Malta has the highest population density of 1,038 persons per square kilometre in the Mediterranean. About a fifth of its population lives on agriculture. The citrus fruits, cereals, vegetables and vines are important crops. Breweries and textile mills are developed to provide employment for its people.

GREECE

Greece is a country of peninsulas and islands in the eastern Mediterranean sea. The country differs considerably from its northern neighbours. Whereas Greece enjoys the typical Mediterranean climate, the Balkan countries have essentially a continental climate. Unlike the other Balkan countries, Greece is primarily a maritime nation.

In area it is as big as the State of Tamil Nadu. It is a sparsely populated country with a total population of 8.5 million persons. The density of population of Greece is only 64 persons per square kilometre. Nearly 43 per cent of the population is urban

Although the country is characterized by the poverty of natural resources, it inherits a very rich and ancient culture and civilization. It is the cradle of the western civilization. Coming in close contact with the Egyptian and ancient Asian river valley civilizations, the Greeks acquired their greatness with hard work and a critical mind and tried to improve upon them. The numerous islands including Crete served as stepping stones in the northward march of civilization from Egypt to Greece.

In Europe, Greece was the first to produce eminent philosophers, poets, artists and scientists. It was the nursery of the western democracy. Our world today would have been poorer without the great Greeks like Homer, Aesop, Pythagoras, Socrates, Plato, Aristotle, Euclid, Archimedes and Eratosthenes—all of whom belonged to the era ranging from 900 B.C. to 200 B.C.

Physical Setting

Greece is a land of dispersed valleys and islands. Nearly four-fifths of its land is mountainous. Its topography was ideally suited to the development of the ancient city States. On the other hand, it often hindered the unity of the country.

The mountains and seas are always very close almost everywhere. They have considerably influenced the Greek ways of life.

The climate of Greece is characterized by hot, dry summers and cool, wet winters. The summer heat is, however, moderated by seas and moun-

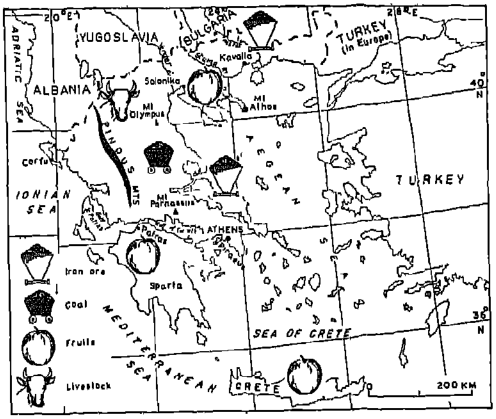


Fig. 72. Greece—Physical Features and Economic Activities

Look at the map carefully Why is Greece called a land of mountains and valleys and of islands and peninsulas ? How did the relief of the country help in the formation of ancient city States ?

tains. The winters are, however, cold in the northern mountains. These mountains are more rainy than the southern part of the country.

In southern Greece the rainfall varies between 40 and 80 centimetres; and in northern Greece it ranges from 50 to 125 centimetres per annum.

The vegetation and crops in Greece vary according to altitude. In a region between 0 to 500 metres above sea level the trees that are commonly grown are oranges, olives, dates, almonds, figs and grapes. The crops confined to this altitude belt are tobacco, cotton and rice.

Oak, chestnut and pine trees are generally confined to the altitudinal belt between 500 and 1,000 metres above sea level, whereas beech. and fir abound at still higher altitudes.

Economic Development

Today Greece is a country of farmers, fishermen, sailors and traders. Agriculture is the base of the national economy of Greece, accounting for nearly 30 per cent of its total national income. Nearly half of its population is still engaged in agriculture.

Only 30 per cent of the land is under cultivation. About 40 per cent of the land is under permanent pastures and meadows, with another 20 per cent under forests.

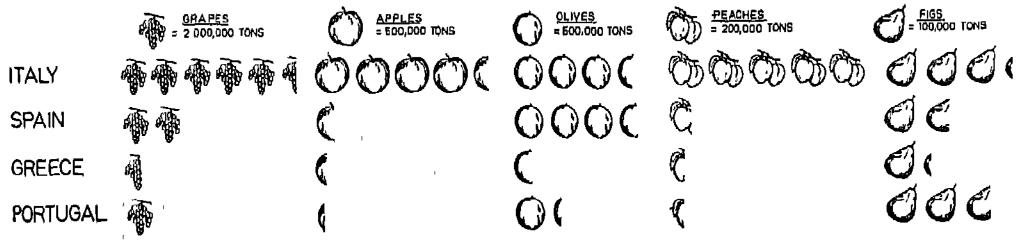
Under its national Five-Year Plans the emphasis is being laid on diversification of agriculture. The country today is faced with a serious problem of soil erosion. It produces wheat, maize, rice and potatoes. Its important cash crops are tobacco and cotton.

It is an important producer of fruits, viz., oilves, peaches, pears, apples, figs, currants, apricots, oranges and lemons.

Among its livestock the sheep are most numerous—about 10 million. With 5 million goats it stands next only to Mexico and the Soviet Union.

Fig. 73. Fruit Production in the Mediterranean Europe

Note the production of various fruits in these countries. Even France produces over 11 million tonnes of grapes a year. How would you explain this ? Why do the Mediterranean countries specialise in fruit production ?



The country has rich bauxite reserves Under its national plans great emphasis is being laid on increasing its installed capacity of electric power.

Beverages and food processing are the leading Greek industries today. It is one of the major producers of olive oil. With its large production of tobacco it has specialized in tobacco products, its leading export item.

The country has recently developed a textile industry. It produces clothing and garments. Nearly a fifth of the national income now comes from manufacturing.

With the old sea-faring tradition this maritime nation had a merchant fleet of 7 million tonnes and tankers 1.6 million tonnes in 1964.

Greece which for a long time was taken to be a country of farmers, shepherds, and traders is now on its way to industrialization.

Athens is the capital city of Greece which was once the political and intellectual centre of the entire Europe. The old ruins still dominate the landscape around Athens Today, it is the leading industrial centre of the country. Salonika is the second largest city and port of the country. It is also an old city of Greece. It is the principal commercial and industrial centre of Macedonia. The Macedonian region and Thrace specialize in tobacco.

EXERCISES

Review Questions

1. Answer the following questions·
   (*i*) Which is the most important characteristic of the Mediterranean climate?
   (*ii*) What kind of vegetation is commonly found in the Mediterranean region?
   (*iii*) Name the three typical trees of the Mediterranean.
   (*iv*) Which are the three peninsulas of the Mediterranean Europe?
2. Compare and contrast:
   (*i*) Oceanic and Mediterranean Spain
   (*ii*) Location and relief of Spain and Portugal
   (*iii*) Structure and major physical divisions of Italy and India.
3. Give reasons:
   (*i*) A farmer of the Mediterranean Europe prefers a hoe to a plough.
   (*ii*) Very often geographers speak of two Spains.
   (*iii*) Italy depends heavily on its "white coal".
   (*iv*) Greece was well-suited to the development of city states.
   (*v*) There are several similarities between the land and people of the Iberian Peninsula and North-west Africa.
4. Make correct pairs from the two columns·

(*i*) A city at the gates of which begins the desert.	Naples
(*ii*) Museum town of Italy	Athens
(*iii*) The greatest trading centre of the medieval Europe.	Vatican City
(*iv*) Leading port of Italy.	Genoa

(*v*) A temporal State.

(*vi*) A beautiful city of the Mediterranean Europe.

(*vii*) Museum town of Spain.

(*viii*) A gateway to the Mediterranean.

Rome
Venice
Gibraltar
Toledo
Madrid
Florence

5. Complete the following statement with the most appropriate ending: Greece became the cradle of Western Civilization because
   (*i*) coming in contact with the ancient river valley civilizations it tried to improve upon them.
   (*ii*) its islands, small peninsulas and isolated valleys were ideally suited to develop City States.
   (*iii*) it possessed rich agricultural resources and a favourable climate.
   (*iv*) it refused to be influenced by its contemporary civilizations in order to develop its own.
6. Give a brief but pointed account of agriculture in the Mediterranean Europe pointing out its problems and special characteristics.
7. "Although the Pyrenees lend Spain the national unity its topography and climate make Spain a mosaic of lands." Elaborate this statement.
8. Compare and contrast Northern and Southern Italy in respect of their topography, climate, agriculture and settlements.

Finding Out

9. Collect information on fruit gardening and life of farmers working in orchards in the Mediterranean countries.

Cartographic Work

10. In an outline map of the Mediterranean Europe show the distribution of crops. Make it a pictorial map if you like.

Picture Reading

11. Study pictures No 51 and 52 and state if you agree with the assumption that conservation of soil and water are necessary for Greece to bring once again prosperity to this ancient land.

Films Available

(*i*) Iberian Peninsula—Spain and Portugal. No. 914 5; 10 mins; English; D.T.A.
(*ii*) Po River Valley—The Italy. No. 914.5; 20 mins; English; D.T.A.
(*iii*) Tuscan Countryside (Peninsular Italy). No. 914.5; 11 mins; English; D T.A.
(*iv*) Pompeii and Vesuvius. No. 914. 5; 11 mins; English; D.T.A.

(*v*) Venice—Queen City of the Adriatic. No. 914.5; 10 mins; English; D.T.A.
(*vi*) Rome—City Eternal. No. 914.56; 11 mins; English; D.T A.
(*vii*) Ancient Greece. No. 913.8; 11 mins; English; D.T.A.

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CHAPTER 10

Central Europe

CENTRAL Europe is a land of contrasts. It consists of lowlands and high mountains. Its agricultural lowlands are both fertile and infertile Its mountains too are young and old —the Alpine and the Hercynian. The young mountains are centres of tourism, whereas the fringes of the old mountains adjacent to the northern lowlands are rich in mineral wealth, offering plenty of scope for mining and industries Its forests promote lumbering and its pastures promote pastoral industries. The glaciated lowlands with a network of rivers and canals provide a valuable network of navigable inland waterways, so useful for its heavy industries.

It is a region of constantly shifting international frontiers Central Europe politically consists of countries that belong to West Europe as well as East Europe. Whereas the West European countries are wedded to democratic forms of government, the East European countries have embraced communist forms of government and economy.

Climatically, it is a land of transition from the oceanic climate of West Europe to the modified continental climate of East Europe.

GERMANY

Occupying the central position on the Great European Plain, Germany is the great "turntable" of the European continent. The shortest routes from north to south, north-west to south-east or west to east pass through Germany. Situated on the North Sea and the Baltic, it shares its land frontiers with nine countries. Germany has thus enjoyed a favourable peacetime location most advantageous for international trade.

In European history the country has earned the distinction of being a land of shifting frontiers A military defeat on the battlefield has never crushed the will of its people to be prosperous, strong and united. In a short time the country has been able to make up its economic and industrial losses incurred during World War II, even though the country has been divided into two. They are the Federal Republic of Germany, popularly known as West Germany; and the German Democratic Republic or East Germany.

WEST GERMANY

The Federal Republic of Germany, including West Berlin, has a total area smaller than that of Andhra Pradesh. In 1964, its total population was 56 million people, the average density of population being 226 persons per square kilometre.

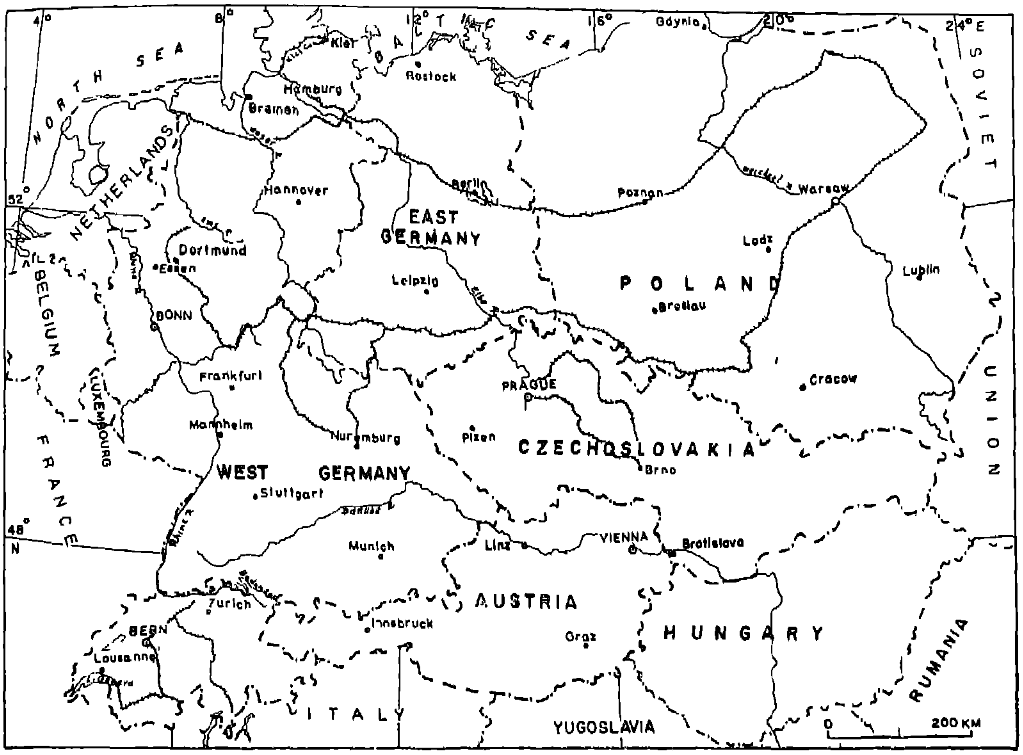


Fig. 74. Central Europe—Political Divisions

Note the various countries of Central Europe. Study the location of Berlin, part of which belongs to West Germany. Why is the region called a land of shifting international frontiers ?

Physical Setting

The three broad physical divisions into which the country is conveniently divided are—the northern glaciated lowlands, the central zone of highly dissected and worn down Hercynian mountains and the rugged Bavarian Alps together with their forelands in the south.

The northern lowlands are covered with unconsolidated glacial deposits of relatively recent origin

The low, worn down uplands of the Central Hercynian zone are between 1,000 and 1,500 metres above sea level. On the west of this region lies the famous Rhine land—a wide rift valley of the Rhine. The plateaus and low mountains including the Black Forest belong to this central zone. The Bavarian Alps form the boundary between West Germany, Switzerland and Austria.

The Rhine is the most important river of West Germany. This 864 kilometre-long river, with its two tributaries, the Mosel and the Main, dominates the western part of the country almost out of all proportions. It is one of the busiest inland waterways of the world. Even precipitation all through the year and the melting snows in the Alps ensure a steady flow of water. The Elbe and the Danube are the other important rivers of West Germany.

The northern part of the country enjoys a marine west coast type of climate with cool summers and mild winters. As one proceeds

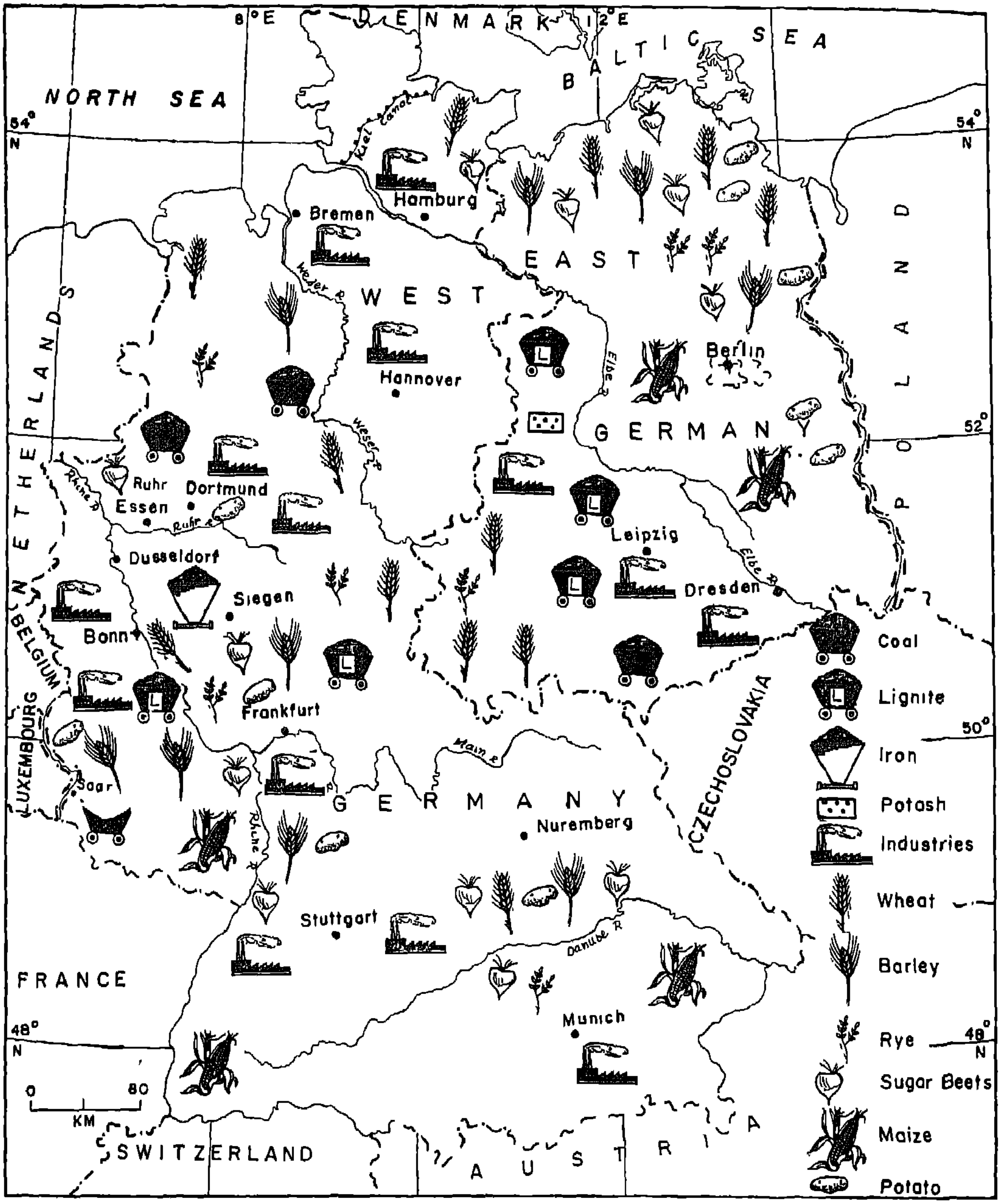


Fig. 75. West and East Germany—Economic Activities

Note that the heart of industrial Germany lies in the Ruhr Valley. Why is it so ? Why is most of the international trade of West Germany funnelled through the Netherlands ?

towards the south the marine influence diminishes. Winters become more severe and the precipitation begins to increase owing to the mountainous nature of the land. Rainfall in the north varies from 50 to 70 centimetres, in the central zone it ranges between 70 and 100 centimetres, whereas in the Bavarian Alps it reaches 200 centimetres.

The natural vegetation over north and central parts of the country is mainly mixed deciduous and coniferous forest.

Economic Development

Nearly 35 per cent of the land is under permanent crops, with another 23 per cent under meadows and pastures and 30 per cent under forests. About 14 per cent of the active population is engaged in agriculture. As a result of the increasing mechanization of agriculture the agricultural population has been shrinking rapidly. The average size of the farm has also been increasing. Nonetheless, the majority of the farms are still under 10 hectares in size. Agricultural production has increased considerably since World War II.

Under the Green Plan the emphasis is being laid on improvement of livestock, increasing use of fertilizers, cheap fuel and power for agricultural machinery and credit facilities with low interests.

The country produces wheat, barley, rye, oats, sugar-beet and potatoes in considerable quantities. Animal husbandry is an important agricultural activity.

In 1964, it produced 21 million tonnes of milk, 490,000 tonnes of butter, and 360,000 tonnes of cheese. It ranked third in the production of butter and cheese. With less than 10% of the number of cattle in India the country produces nearly as much milk as India. With a meat production of 2.9 million tonnes it ranked fourth in the world.

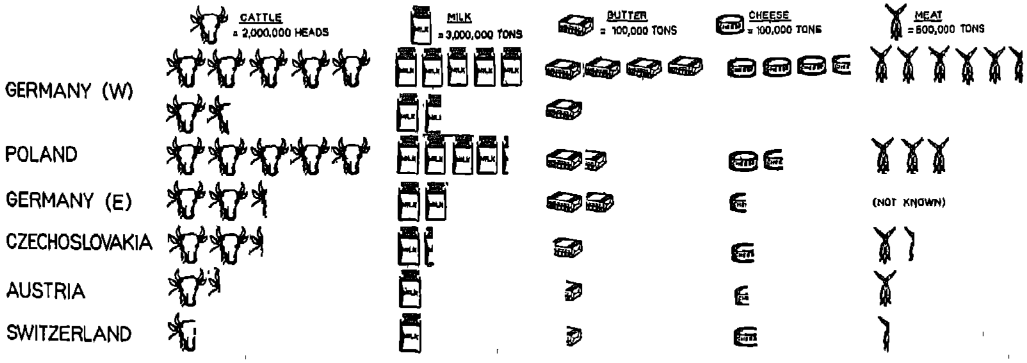
With nearly three-tenths of its area under forests, it produced considerable amount of lumber, wood-pulp, paper and newsprint.

Coal is the greatest single resource of West Germany and the key to its material prosperity. The biggest coal-field of Europe is located in the Ruhr. The other coal-field of economic significance is in Saar In 1964, the country produced 143 million tonnes of coal and 111 million tonnes of lignite. The country also possesses limited reserves of iron, crude oil and natural gas. Its total installed power capacity was 36.1 million kw. of which only 10 per cent was hydel power.

Iron and steel form the backbone of German industries. In 1964, it produced 23 million tonnes

Fig. 76. Cattle and Animal Products of Central Europe

Note the dominating position of West Germany in animal husbandry. It ranks fourth in the production of meat in the world. Which of these countries has the highest production of milk per head of cattle ? How will you explain this ?



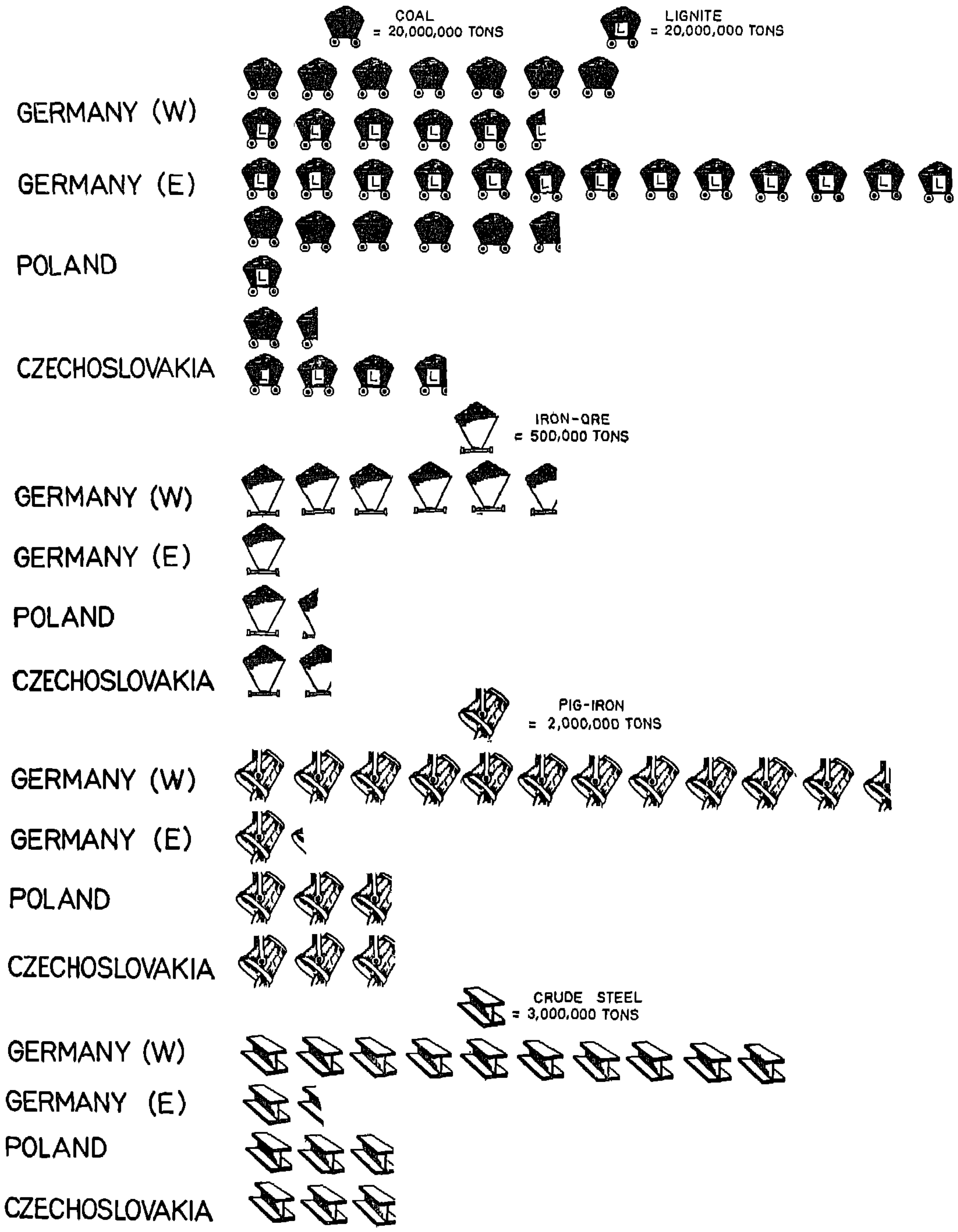


Fig. 77. Mineral and Industrial Production of Germany, Poland and Czechoslovakia

Note the dominating position of West and East Germany in the production of coal and lignite respectively. Compare the position of Germany with those of the United Kingdom and France in coal, iron-ore, pig-iron and crude steel

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of pig-iron and 31 6 million tonnes of crude steel, standing fourth in the world production. It ranked second in automobile industry in the world with the production of 2.65 million cars and 250,000 commercial vehicles. It is one of the leading manufacturers of aluminium, cement and sulphuric acid. Germany has always been in the forefront of chemical industries. The country has a sizable textile industry.

The transport network of West Germany is one of the best in the world. There are about 36,000 kilometres of railway track Its roads are one of the finest in Europe The country had 4,600 kilometres of navigable inland waterways. Hamburg and Bremen are its leading ports that rival with London.

Regions of West Germany

The regions of West Germany are the Northern Lowlands, the Ruhr Industrial Region, the Central Highlands, the Rhine Valley, and the Bavarian Alps (with their forelands).

The Northern Lowlands specialize in dairying and livestock grazing. This industry makes the maximum use of the bog, marsh and sandy heaths—all poorly drained areas. Agriculture is confined to well-drained or artificially drained areas Vegetables and beets are the main crops. Further south lie the best agricultural areas, growing wheat, barley, sugar-beet and fodder crops.

Hamburg is the leading German port which handled 30 million tonnes of goods in 1960. Bremen is another port of West Germany.

The Ruhr Industrial Region is on the Ruhr coal-fields which accounts for 90 per cent of the coal and 80 per cent of the steel production It is an outstanding industrial region of the world. Its capacity to produce steel equals that of the United Kingdom. Machine building, chemicals and textiles are its other important industries. The rail and road network, and the Rhine waterway are its assets It imports iron-ore from France and Sweden in addition to the local supplies from Sieg Valley Abundance of local skilled labour is yet another favourable factor. Essen, Dortmund and Dusseldorf are the major industrial towns of this thickly populated region surrounded by the best agricultural land.

The Central Highlands is a complex of worn down mountains and dissected plateaus. The forested and grass-covered highlands are generally infertile, whereas the basins and sheltered valleys are intensively cultivated with cereals, sugar-beets and potatoes. Slopes are terraced for the cultivation of vine and fruits Livestock graze on poor rough grasslands.

The Rhine Rift Valley is about 30 kilometres wide and nearly 300 kilometres long. The valley produces wheat, tobacco, hops and fruits Vineyards are confined to the lower slopes and forests are generally on the upper slopes. The Main and Neckar Valleys are tributary to the Rhine valley, with Frankfurt and Nuremberg as the principal cities of the region and Stuttgart as its industrial centre.

From Mainz to Bonn is the picturesque Rhine gorge Terraced vineyards along the slope add to its majestic beauty. Bonn the capital city of West Germany is situated at a point where the Rhine enters into the Northern Lowlands The coal-fields of the Saar along the French border have also now been transferred to West Germany.

The Bavarian Alps and the Alpine Forelands form the southernmost region of Germany. The Alpine forelands lie between the Bavarian Alps in the south and the Danube in the north. It is a level plateau covered with glacial debris. Dairying is the main industry. The valley bottoms with fertile soils are intensively cultivated. Munich is an art and music centre of Germany. It also possesses electrical and textile industries. There are several breweries producing variety of wines.

The northern fringe of the Alps is known as the Bavarian Alps. The slopes of the narrow mountain belt are heavily wooded where lumbering is a major economic activity. Mountain meadows provide the basis for pastoral activities It is also the centre of a tourist industry.

EAST GERMANY

With an area less than one-third of West Germany the country in 1964 had a population of 16 million people The average density of population is about 150 persons per square kilometre.

Physical Setting

The coastal belt is sandy with dunes, small hills and lakes of glacial origin.

The central part of the country consists of fertile plains, with a few low hills and a sandy arid section.

The southern section consists mainly of Middle Range Mountains, and is heavily wooded.

The country has a temperate climate. The north-western part is tempered by the maritime westerlies. The continental influence is more pronounced in the south-east where summers are warm and winters cold. The average annual precipitation is nearly 60 centimetres.

Economic Development

Of its total land area nearly 47 per cent is under cultivation, with another 13 per cent under permanent pastures and 27 per cent under forests. Nearly 18 per cent of the active population is engaged in agriculture.

Before World War II its economy was complementary to that of West Germany. Today its truncated economy makes it pay heavily for the raw materials as well as foodstuffs.

Most of the agricultural land is devoted to food and food grains. It produces rye, wheat, barley, oats, beet and potatoes. Animal husbandry is an important agricultural activity. A steady afforestation programme is under way to make up for the ruthless exploitation and deforestation during and after World War II.

Lignite is by far the most important mineral resource of the State. In 1964, 257 million tonnes of lignite was mined. The country meets its power requirements through thermal electricity produced from lignite. It produces potash, rocksalt, copper and uranium. The industrial base of the country depends upon lignite, potash, gypsum and rocksalt for its flourishing chemical industry.

Importing iron for its steel industry, it produces crude steel, coke, various acids and fertilizers in large quantities. Textiles, synthetics, plastics and opticals are the industries receiving special attention of the State. The transport system in the country is highly developed. The country's trade is now oriented to the Soviet Union and the other East European Communist countries.

East Berlin, the capital city of East Germany, has over a million inhabitants. The other city is Leipzig, a city known for furs and publishing industry. It is also well-known for the International Trade Fair Dresden is noted for electronics, scientific instruments, optical goods, porcelain and earthenware. Magdeburg is a centre of chemical and fertilizer industry. Rostock is a deep-sea port known for ship-building industry.

BERLIN

Berlin the former capital of united Germany is situated half-way between the Elbe and the Oder. Before World War II the city had 4 million inhabitants. It was the second largest industrial centre of united Germany with major electrical, telephone and optical industries. It was also an important inland port served by a canal. After World War II, it was occupied by the Soviet Union, the United States, the United Kingdom and France. It was subsequently divided into two—East Berlin and West Berlin. West Berlin, with over two million people, now belongs to West Germany. The city has again revived its electrical and precision instruments industry. It also specializes in clothing.

SWITZERLAND

Switzerland is a land of mountain peaks and passes, glaciers and lakes. This small yet prosperous, barren but beautiful Alpine country is situated on the watershed of Europe. Its rain waters are carried to the North Sea, the Mediterranean, the Adriatic and the Black Sea. Switzerland has a total area nearly as large as Kerala in India.

Physical Setting

The country consists of three topographic regions—the Jura Mountains in the north-west along the French frontiers, the Middleland or the Central Swiss plateau and the Alps on the south.

The highest point in Switzerland is Dufour Point—4,634 metres, and the lowest point is the Lake Maggiore—193 metres above sea level. It has about 1,500 lakes of which Lake Geneva and Lake Constance are the largest.

Northern Switzerland has a cool, temperate, rainy climate, whereas in the south the Mediterranean type of climate prevails In the north the winter average temperature is generally below freezing point but in summer it rarely exceeds 21°C

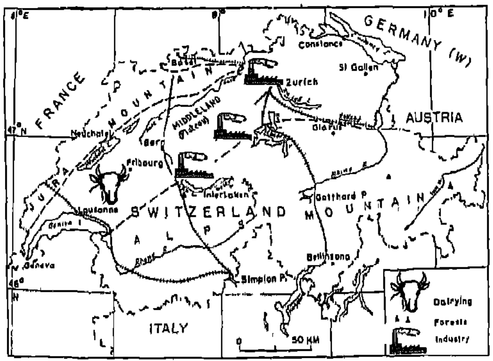

Fig. 78. Switzerland—Physical Features and Economic Activities

Note the three distinct geographical divisions of Switzerland. Why is Middleland called the heart of the country ? What are the natural assets of Switzerland ?

The natural vegetation changes according to altitudes. Chestnut, walnut, fig and orange trees are confined to a belt below the altitude of 550 metres. Beech, maple and oak prevail up to an altitude of 1,200 metres Fir and pine are found in a region up to 1,700 metres. Dwarf pines exist in a belt up to 2,100 metres, and there are alpine grasses upwards till the snowline is reached.

Economic Development

Although two-thirds of Switzerland consists of mountain uplands only a fourth of the total area of the country is a wasteland. About 10 per cent of the land is under permanent crops. Approximately 42 per cent of the land area is left under permanent meadows and pastures, with another 24 per cent under forests.

Swiss agriculture offers employment to 11 per cent of its active population. The country meets with 55 per cent of its food requirements. It produces wheat, barley, rye, oats, potatoes and sugar-beets More important, however, is animal husbandry as the land under pastures is over four times the cultivated land. In 1964, its production of meat was 255,000 tonnes, milk was 3.1 million tonnes, butter 30,000 tonnes, and cheese 73,000 tonnes. Swiss cheese is world famous.

With nearly a quarter of its land area under forests, timber and wood-pulp are its important resources. In 1964, it produced 250,000 tonnes of wood-pulp, and 410,000 tonnes of paper and newsprint

The country is poor in mineral resources and has little coal and lignite deposits Its greatest and inexhaustible source of power is hydro-electricity, aptly described as white coal. In 1964, its total installed capacity was 8.1 million kw of which the hydel-power has been 7.9 million kw.

The country has one of the highest per capita installed capacity of power in the world. This has been the secret of its very high standard of living

It produces pig-iron and crude steel, cement and sulphuric acid.

The Swiss industry depends upon imported raw materials which are turned into high-quality finished products for re-export. Being a landlocked and a mountainous country, the Swiss industry specializes in the production of high-cost and low-weight goods to avoid excessive expenditure on freight or transport. Nearly 45 per cent of its active population is engaged in industry. Its industrial plants are generally small and scattered over a large area It specializes in the production of high-grade machinery, precision instruments, watches and clocks, lenses and optical instruments, metal and engineering goods, chemicals and textiles

It commands a high reputation in the production of heavy arms and ammunition. It is also an important producer of pharmaceuticals and dyes. The well-known Swiss watches and clocks account for 40 per cent of its exports and rank only next to machinery. The country also specializes in the production of electric goods, from small batteries to giant generators and turbines. Swiss food processing industry is also well-known.

Tourism is perhaps the most important industry of Switzerland. Justly renowned are the Swiss hotels for their efficiency and hospitality. There are over 7,500 hotels with 200,000 beds. Nowhere in the world is this industry so well-developed and run on such scientific lines as in this land.

Regions of Switzerland

The Jura Mountains on the French boundary are low folded mountains. Dairying, forestry and watch making are the important activities of the region. The south-facing slopes are generally clad with vineyards. La Chaux-de-Fonds is the centre of the watch industry and Basel, a Rhine port and a railway town, is a centre of chemical, silk and machine industries

The Middleland which is a plateau is the heart of agricultural and industrial Switzerland. It covers nearly 28 per cent of the total area of the country. Intensive mixed agriculture with an emphasis on dairying is commonly practised. Cheese, condensed milk and chocolate are the major products Silk, watch and cotton textile industries are located around Zurich The cities of Geneva and Bern are famous for the manufacture of machinery, watches and textiles. They are also the tourist's attractions. Bern is the capital city of Switzerland. The diamond cutting industry is growing fast at Geneva in recent years.

The Alps, accounting for 62 per cent of the total area, specializes in forestry, animal grazing, dairying and tourism. Transhumance is the rule Animals along with their herdsmen move to the upland Alpine pastures in summer and retreat to the valley bottoms down below in winter. Thus subsistence agriculture in the low valleys and animal grazing in mountain uplands are complementary to each other.

Switzerland is a small country with four national languages—German, French, Italian and Romansch.

Steep slopes, poor soils and severe climate offer very poor agricultural resources. Mountains hinder transport and traffic. The country is landlocked with no access to the sea for international commerce except through the Rhine and there is almost a total lack of minerals. Yet, the country has made the most of its barren but beautiful land. With imaginativeness and industry, the pastures and forests, the natural beauty of the mountains and lakes and waterpower have all been turned into enviable assets. Today the 5.9 million people of the country with a population density of 142 persons per square kilometre enjoy one of the highest standards of living in the world. Its neutrality in international affairs is also responsible for its prosperity. Although the country is not a member of the United Nations, the headquarters of the international organizations like Red Cross and International Labour Organization are located in Switzerland.

AUSTRIA

Austria is yet another mountain republic of Central Europe. This landlocked country is comparable to the State of West Bengal in its size.

Physical Setting

The country is dominated by the Austrian Alps with only a quarter of the area consisting of plains and low hills. Most of western and central Austria is mountainous, whereas the eastern part is relatively flat and low. Danube is the important river, navigable all along its length of 350 kilometres in Austria.

Climate is governed mainly by altitude and much of the land is forested with deciduous and coniferous trees.

Economic Development

Nearly one-fifth of its land area is cultivated, 28 per cent of the land is under pastures and 38 per cent under forests. About 22 per cent of the active population is engaged in agriculture. Nearly a sixth of its total exports are derived from agriculture. It meets nearly nine-tenths of its food requirements. Wheat, barley, rye, oats and maize are its major crops, besides sugar-beet and potatoes.

Stock-raising and dairying are the traditional industries of Austria. It produces meat, butter and cheese in considerable quantities. It exports breed cattle and quality horses in large numbers.

With 38 per cent of its area under forests, it is one of the leading exporters of wood and wood products Prominent among its exports of forest products are timber, toys, matches, turpentine, resin and prefabricated houses. Its production of wood-pulp amounted to over half a million tonnes. Austria produces newsprint and other paper.

The country has the largest reserves of magnesite in the world. It mined half the magnesite supplies of the world in 1961—nearly 1.6 million tonnes. It also produces coal and lignite. The country is very rich in water-power resources. Its installed power capacity was 5 million kw. of which the hydel-power capacity was about two-thirds.

Iron and steel are the major industries of Austria. It is a producer of automobiles, tractors and various kinds of machinery. It also produces aluminium for export. Textiles is the second important industry followed by chemicals, particularly fertilizers and plastics. Glass, jewellery, stone cutting, pottery and wood carving are its major and well-known handicrafts.

Austria with its total population of over 7 million people has a population density of 86 persons per square kilometre—much less than Switzerland, in spite of its better resources.

Vienna has nearly a quarter of the country's total population. It is located on the Danube at the cross-roads of Europe—between the Alps and the Carpathians. It was the capital city of what was once a big Austrian Empire. Also, it was a leading medical centre of Europe prior to World War I Today it is an industrial centre for metallurgy, textiles, electrical goods and food-processing. It is often said that the capital city is too big for such a small country of today.

CZECHOSLOVAKIA

The Republic of Czechoslovakia consists of the Czech lands and Slovakia. This landlocked country is about the size of the State of Tamil Nadu in India.

Physical Setting

The Czech lands consisting of Bohemia, Moravia and Silesia belong to a zone of old and worn down mountains and plateaus. Slovakia on the other hand belongs to the young fold mountains namely, the Carpathians. The narrow natural gap between these two mountain systems is known as the Moravian Gate through which passes a north-south line of communication along the upper Oder and Morava rivers.

Western Czechoslovakia or the Bohemian Plateau is drained by the Elbe and its tributaries into the North Sea. Central and Eastern Czechoslovakia, consisting of Moravia and Slovakia, is drained by the Danube and its tributaries, into the Black Sea North Central Czechoslovakia —Silesia—is drained into the Baltic by the Oder river.

Czechoslovakia has a transitional climate. Whereas the Czech lands experience the moderating oceanic influence, the Slovakia on the east has more pronounced continental effect. Western depressions and the prevailing north-west winds bring moisture with them, mainly in spring and summer. Relief plays an important part in the distribution of rainfall which varies from 50 to 125 centimetres

Nearly a third of its area is under forests Conifers predominate in the west, gradually thinning out towards the east where mixed and deciduous trees are more common

Economic Development

Czechoslovakia is well endowed with agricultural, forest and mineral resources. Nearly 43 per cent of the land is cultivated, with another 14 per cent under pastures and 35 per cent under forests. Nearly 18 per cent of the active population is engaged in agriculture.

Bohemia is an intensively cultivated part of the country. It is known for very high agricultural yields, the best farm animals and a high degree of mechanization. Czechoslovakia produces wheat, barley, rye and oats. It is one of the leading producers of sugar-beet and potatoes.

Stock-raising is its important activity. Besides cattle, pigs and poultry it also raises sheep, goats and horses

With a large forested area, the country exports timber and produces wood-pulp, newsprint and paper. It produced nearly 600,000 tonnes of wood-pulp and half a million tonnes of paper and newsprint in 1964.

The country has fairly good mineral resources especially coal, although it has to import some of its major mineral requirements. North central Czechoslovakia is the leading producer of coal because of the southernmost extension of the Silesian coal-field. It produced 28 million tonnes of coal and 75 million tonnes of lignite in 1964. It has some of the richest uranium deposits on the continent. It produces antimony, magnesite, mercury, crude oil and gas on a small scale. It has to import iron-ore for its flourishing iron and steel industry.

The country produced 5 8 million tonnes of pig-iron and 8 4 million tonnes of crude steel, and is the leading manufacturing nation of east-central Europe. Its manufactures account for over 62 per cent of the total national income. Its heavy engineering and metallurgical industries are well-known. Heavy armaments, ammunition and military equipment are among its specialities. It also produces locomotives, aircrafts, tractors and electric motors. Textiles, chemicals, glass, leather goods, sugar and wines are its other major industries.

Czechoslovakia with nearly 14 million people has an average density of 110 persons per square kilometre. A large proportion of its population is urban. Prague is the leading city of Czechoslovakia. It is the capital city with textiles, chemicals, paper, glass and machinery as its main industrial products.

Brno is the other important industrial centre with textiles, breweries, chemical plants, machine shops and the famous Bren machine-gun factory. Gottwaldov is the original centre of the famous concern of the Bata Shoe Company.

POLAND

The country justifies its name "Poland", which in the Polish language means an *open* *field.* The large parts of the country consist of level to rolling plains and low, gently undulating plateaus In area it is comparable to the State of Maharashtra. With a total population of 31 million in 1964 its average density of population was 100 persons per square kilometre.

Physical Setting

The country is located on the Great European Plain. The Oder, Warta and Vistula drain the country into the Baltic Sea. The country may be divided into three units—(*i*) Baltic higlands in the north, (*ii*) Central lowlands and (*iii*) Southern uplands.

In the north lies the Baltic highland consisting of glaciated region with numerous lakes and sandy soils. It is separated from the sea by a narrow coastal lowland. The undulating central lowlands consist of an old crystalline platform. The southern uplands are marked by rich loam of glacial origin and important mineral deposits.

Poland has marked continental climate conditioned by the westerlies. Summers are cool and winters cold. Precipitation is more pronounced during the summer months with rainy days ranging between 85 and 100. The average annual rainfall varies between 50 and 135 centimetres from place to place.

Coniferous trees, especially the pine, are more predominant. Birch, beach and elm are common among the deciduous trees which form nearly 30 per cent of the total forest.

Economic Development

Poland is traditionally an agricultural country. Nearly 52 per cent of the total area is cultivated with another 14 per cent left under pastures and 22 per cent under forests. Nearly 38 per cent of the active population is engaged in agriculture. After World War II the agriculture was stagnant till 1954; during 1955-60, however, it increased its production by 37 per cent.

Rye, wheat, oats and barley are its major cereals and sugar-beets and potatoes the important cash crops

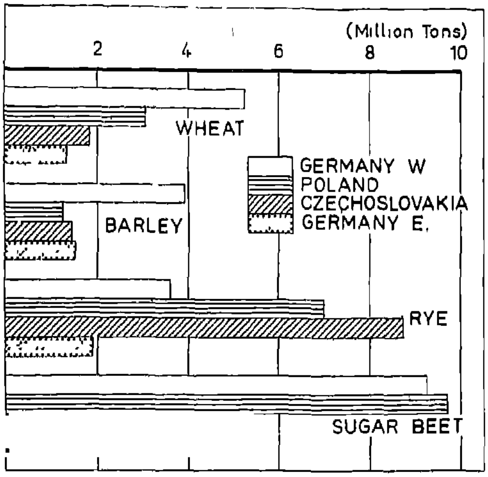

Fig. 79. Agricultrual Produce in Poland, Germany and Czechoslovakia

Note that Poland is an important producer of sugar-beets (besides potatoes), West Germany leads in wheat and barley, whereas Czechoslovakia tops in rye.

Animal husbandry is an equally important sector of agriculture Its production of milk was 12.6 million tonnes Timber is an important natural resource, and meets its home requirements.

The greatest mineral and industrial assets of the country are its rich coal and lignite reserves Upper Silesia in the south-west along the Czech border is the leading mining and manufacturing region. Coal, lead and zinc are the principal minerals. Silesian coal-field is the second largest in Europe, next only to the Ruhr field. Metallurgy is the main industry of the Silesian region. In 1964, it produced 117 million tonnes of coal and 20 million tonnes of lignite. It has small deposits of iron, crude oil and natural gas. The country is rich in zinc and uranium deposits. Its main exports are coal, coke, finished iron and zinc. It depends almost entirely on thermal electricity produced from coal and lignite.

Heavy iron and steel is its major industry. In 1964, it produced 5.6 million tonnes of pig-iron, and 8 6 million tonnes of crude steel

During 1949-1961 the industrial production increased about five-fold. During this period the number of the people employed by industries rose by about 80 per cent Industrial output accounts for nearly 48 per cent of the total national income

Krakow is the main transport and industrial town. Lodz is the Polish Manchester as it is the old centre of its textile industry. Danzig is the major port of the country situated on the Baltic Sea.

Warsaw, the great Polish city and the capital, is situated on the Vistula. It is a political and intellectual centre of the country. Metallurgical, textile and food industries employ large proportion of the people of this million-city. It is a hub of railway and river transport

EXERCISES

Review Questions

1. Answer the following questions:
    - (*i*) Name the three broad topographic divisions into which Germany is divided.
    - (*ii*) Which is the most important single natural resource of West Germany?
    - (*iii*) Name the four seas into which waters of Switzerland are drained
    - (*iv*) What is Moravian Gate?
    - (*v*) Which are the two most important coal-fields of Central Europe?
2. Give reasons:
    - (*i*) Central Europe is a region of constantly shifting frontiers
    - (*ii*) Climatically it is a land of transition.
    - (*iii*) Rhine is the busiest inland waterway of Europe.
    - (*iv*) The capacity of the Ruhr region to produce steel equals to that of the United Kingdom
    - (*v*) Although Switzerland is a mountainous land only a fourth of it is a wasteland.
    - (*vi*) Switzerland specializes in the production of high cost and low weight goods.
3. Distinguish between:
    - (*i*) A rift valley and a gorge.
    - (*ii*) Old block mountain and young fold mountain.
    - (*iii*) Federal Republic of Germany and German Democratic Republic.
4. Give a technical term for each of the following:
    - (*i*) Higher ground separating two adjoining drainage basins or river systems.

(*ii*) A kind of agriculture in which major emphasis is on breeding and rearing milch cattle.
(*iii*) An industry characterized by the heavy and bulky nature of raw material and finished products and much concerned with transport costs.
(*iv*) A seasonal movement of livestock and herdsmen from and to the mountains or between the regions of differing climates
(*v*) Farming in which its produce is mainly consumed in the farmer's household.

5. Make out the correct pairs from the two columns:

(*i*) A country which means an open field.	Austria
(*ii*) A small country with a big capital city	Czechoslovakia
(*iii*) A turntable of the European continent.	Switzerland
(*iv*) East Central European country specializing in heavy armaments, ammunition and military hardware.	Germany
(*v*) A country known for its traditional neutrality.	Poland

6. Give an account of iron and steel industry of West Germany pointing out various geographical factors in favour of its location and growth
7. Elaborate the following statement in reference to structure, topography, climate, soil and population distribution:

"Central Europe is a land of contrasts".

8. Give an account of life in different regions of Switzerland pointing out how the Swiss people have raised their standard of living by making the most of their limited natural resources.

Finding Out

9. Collect information and maps of Central Europe to show that it is a land of shifting political frontiers. What makes it so?
10. Gather information and pictures on the tourist industry of Switzerland. Report your findings to the class.

Cartographic Work

11. Draw a pictorial sketch-map of the region served by the Rhine river pointing out the following:
(*a*) the countries it passes through; (*b*) the industrial regions it serves; (*c*) the commodities it carries up and down the stream; and (*d*) the landscape along its banks.

Picture Reading

12. Study pictures No. 28, 29, 36, 39, 59 and 61 along with the frontispiece and see how animal husbandry is practised in very different ways in different parts of Europe. How will you explain this variety of ways? What broad generalization will you arrive at?

Films Available

(*i*) The Eifel Hillis (A German Landscape in the Rhine Area). No C-161, 14 mins; English; E.F R.G

(*ii*) Village Life from Dawn to Dusk (A Day in a German Village). No 387, Parts I & II; 11 mins; English; E.F.R.G

(*iii*) The Town under Haze (Oberhausen—An Industrial Town of the Ruhr District) No. C-408; Parts I & II; 25 mins; English; E F.R G

(*iv*) Berlin—Industrial Centre No. 499; 12 mins, English; E.F R G.

(*v*) Man, Machines, Coal (Work in a German Coal Mine). No. 34; 10 mins; English, E.F.R.G

(*vi*) Atomic Power Station Kahn No. 265; 13 mins; English; E.F.R.G.

(*vii*) Rhythm of a Port (The Hamburg Port). No. C-314, Parts I & II; 13 mins; English; E F.R.G.

(*viii*) From the Shipyard into the World (Shipbuilding). No. 125; 13 mins, English; E.F.R.G.

(*ix*) The Happy Face of Switzerland. English, S.E.I.

(*x*) Let us Look at the Switzerland. No 914.94; 13 mins; English; D.T A.

(*xi*) St. Gotthard—Link between North and South. English; S E I.

(*xii*) Mountain Farmers. No. 914.94; 20 mins; English; D.T A.

(*xiii*) Rhythm of a City—Zurich. English; S.E I

(*xiv*) Slovak Pastorale (Pastoralism in Czechoslovakia). No 914.37; 15 mins; English; D.T.A.

Further Readings

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Preece, D. M. and Wood, H. R B, *Europe*. University Tutorial Press, London, 1964, Pp. 99-145.

*Shackleton, M. R., *Europe: A Regional Geography*. Longmans, Green and Co., London, 1965, Pp. 262-377.

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CHAPTER 11

South-eastern Europe

SOUTH-EASTERN Europe comprises the middle and lower Danube Valley and the Balkan Peninsula. It consists of the States of Hungary, Rumania, Yugoslavia, Albania, Bulgaria and Turkey in Europe. Although Greece belongs to the Balkan Peninsula it is generally included in the Southern or Mediterranean Europe because it is typically Mediterranean in location as well as climate.

Politically, all the countries have Communist governments committed to Communist ideology and way of life. Since World War II, the economies of these countries have undergone tremendous change. They are no more mere agricultural countries In every country the emphasis is laid on metallurgical, machine building and other heavy industries. All of them have made rapid progress in industries. Their progress in agriculture is rather slow. In many cases, the switch over from personal holdings to collective farming has not been smooth.

The Danubian countries of the north and the Balkan Peninsula in the south are the two main sub-divisions. Whereas Hungary and Rumania belong to the former, Yugoslavia, Albania, Bulgaria and Turkey in Europe belong to [illegible] latter. The region as a whole consists of mountains and river valleys with numerous local cultural patterns. It is that part of Europe where the occidental or western and oriental or eastern cultures meet.

HUNGARY

Situated in the Carpathian basin of central East Europe, Hungary is a Danubian country occupying the middle Danube Basin. With an area comparable to that of West Bengal, the country has a total population of over 10 million people, and an average density of 109 persons per square kilometre. Till recently, it was considered to be the granary of Europe

Physical Setting

Nearly two-thirds of the country is below 200 metres in altitude. Hungary consists of three geographical regions: (*i*) a lesser plain in the west, (*ii*) low mountains crossing the country from the south-west to the north-east, and (*iii*) a greater plain in the east.

The Danube, forming partly the northern boundary between Hungary and Czechoslovakia, suddenly turns due south and flows through the middle of the country before it enters Yugoslavia.

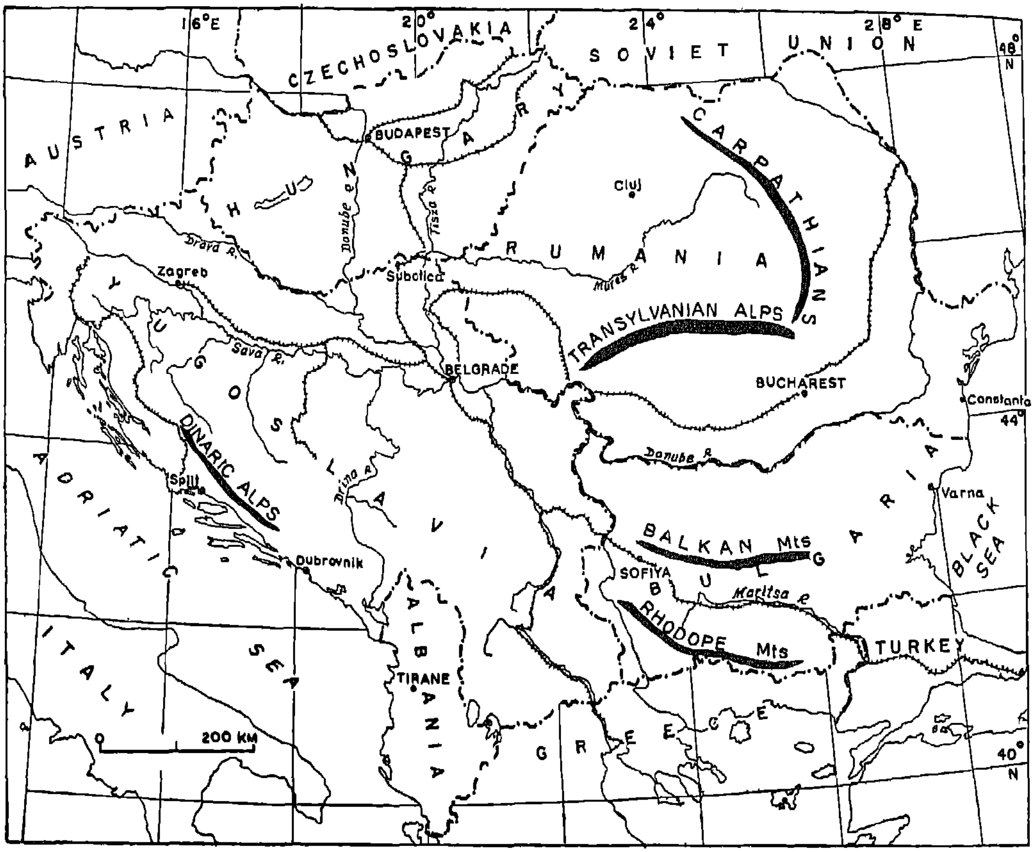


Fig. 80. South-eastern Europe—Physical Features and Political Divisions

Note the river Danube passing through and forming boundaries between several countries What makes Belgrade the most important hub of transport in South-eastern Europe ?

Tisza is another important river of the Great Plain in eastern Hungary.

The country has a continental climate with a little influence of the oceanic climate of the west and the Mediterranean climate of the south. The rainfall has also a summer maximum. The average rainfall is over 60 centimetres with a higher amount of precipitation in the west. Severe droughts especially in summer, however, are not uncommon.

Whereas the steppe grasses form the natural vegetation of the lowlands, the deciduous oak tree is the more predominant species of the woodland. The coniferous trees are generally confined to the mountains.

Economic Development

Possessing as it does some of the most fertile soils of Europe, nearly 60 per cent of the total land area of Hungary is under cultivation. Another 15 per cent of the land is under permanent meadows and pastures and nearly an equal amount of area is under forests. This rich agricultural country of Europe was aptly described, not many years ago, the granary of Europe.

Before World War II, agricultural products formed the bulk of the country's export. Its wheat exports were well over 430,000 tonnes. But today Hungary has to import wheat to meet its own requirements. This is ascribed to various reasons such as drought conditions, diversification of agriculture, greater emphasis on industrialization at the expense of agriculture and reluctance of farmers to the introduction of collective farming. Today a little less than a third of its population is engaged in agriculture.

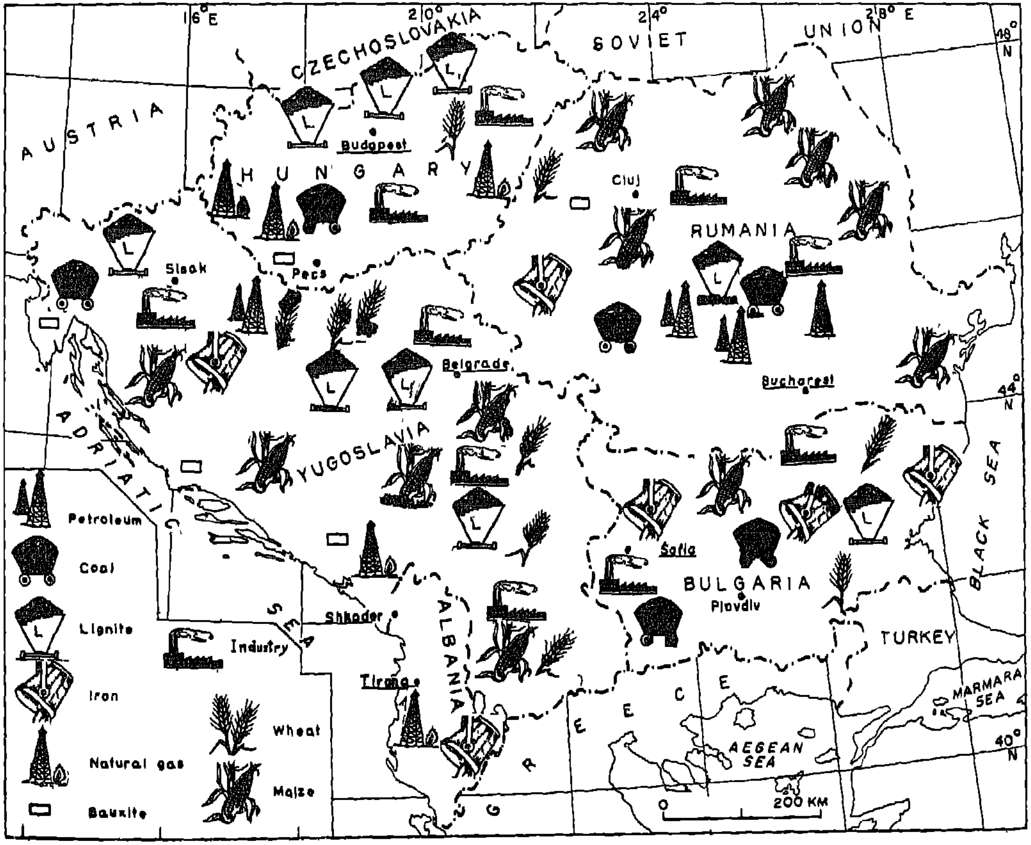
The great plain of eastern Hungary with its spring rains, warm summers, and fertile soils is a rich agricultural land. Wheat is the principal crop, followed by maize and barley. The marshy lands of the eastern Danube are drained and brought under rice culture, which forms the northernmost limit of rice in Europe. Tobacco, sugar-beet and potatoes are the cash crops. The low central mountains of Hungary are noted for the best vineyards along their slopes.

Animal husbandry is only next in importance to cereal farming, but the quality of its livestock is not so good as compared to that of Western or Central Europe and the industry needs to be efficiently managed.

Wine, beer, sugar and flour-milling are the important food processing industries of Hungary.

Fig. 81. South-eastern Europe—Economic Activities

Note the crops of this region. Which minerals form the basis of the new industries being developed in this region ?



It produced 408,000 tonnes of sugar in 1964. It now has a well-developed textile industry

Hungary is gradually switching over from these industries based on agricultural raw materials to industries based on minerals.

Bauxite is the most important mineral resource of the country In 1963, it produced 1.3 million tonnes of bauxite. Czechoslovakia and East Germany are the important customers of Hungarian bauxite It produces some coal and lignite. The country also mines uranium. Mineral deposits of Hungary are mainly located in its central hilly region Hungary has to import iron-ore, coal and petroleum to meet its own requirements. It depends entirely on thermal electricity.

It produces pig-iron and crude steel, and concentrates on the production of lathes, buses, tractors, motorcycles, diesel engines, television sets, sewing machines and river boats, mainly for export. It produces superphosphates and nitric acid. It is an important producer of footwear.

Budapest, the capital city of Hungary, consists of three cities—Buda, old Buda and Pest, situated near the ford across the Danube. It is a centre for bauxite smelting, and an important railway junction, where small ocean going vessels of the Black Sea reach through the Danube. This leading industrial centre of the country has metallurgical, textile, food-processing and river-boat building industries.

In eastern Hungary orchards and vegetable gardens invariably surround the villages. The settlements consist of large villages often described as "peasants towns". The western Hungarian plain is the oldest settled part of Hungary where towns are mostly market centres.

RUMANIA

This country, standing on the Black Sea, has an area slightly bigger than that of Jammu and Kashmir. Danube forms the boundary between Yugoslavia and Bulgaria on the one side and Rumania on the other. Among the Balkan states it stands next only to Yugoslavia in size. In population it is almost equal to Yugoslavia

Physical Setting

The arc-shaped Carpathian Mountains constitute the backbone of the Rumanian land. The southern limb of these mountains is known as the Transylvanian Alps. Surrounded by the Carpathian arc is the Transylvanian Basin—a hilly region, highly dissected by deep river valleys.

The Eastern Carpathians are low mountains. On the southern and eastern fringes of the Carpathian Mountains are the low plateau and plains of Moldavia and Valachia The low, worn-out plateau of Dobruja forces the Danube to turn northwards before it falls into the Black Sea. The Danube delta is mostly a low-lying swampy area, whereas the rest of the sea coast consists of cliffs rising sharply from the sea.

Rumania has a moderate, humid, continental type of climate. The land is exposed to the northerly cold winds in winter and to the moderate westerly winds in summer. During summer the highest temperature is found in the Danube Valley. The coastal area has a moderating influence of the Black Sea. The average annual precipitation is about 100 centimetres in the mountainous region and decreases to about 40 centimetres in the eastern plains, including the Danube delta.

The lower slopes of the mountains are covered with deciduous trees, whereas those at a higher elevation are clad with conifers. The dry lowlands are covered with steppe grasses, and the humid plains are occupied by tall and deep-rooted grasses.

Economic Development

Rumania is an agricultural land with 45 per cent of its total land area under cultivation. Another 18 per cent of the land is under permanent pastures and nearly 27 per cent under forests. About 43 per cent of the active population of the country is engaged in agriculture. Approximately 30 per cent of the national income is derived from agriculture including forestry.

In recent years, even in agriculture the emphasis is on diversification with special stress on the industrial and fodder crops especially maize. The cereals which it produces are wheat, barley and oats. The cash crops consist of potatoes, sugar-beets, tobacco, sunflower seeds and soyabeans.

Moldavia is the granary of south-eastern Europe, with wheat and oil seeds as the main agricultural commodities.

The foothills of the Carpathians have fruit gardens with plum, cherry and apple as main crops. Marshy swamps in the Rumanian plains have been turned into well-drained vegetable gardens.

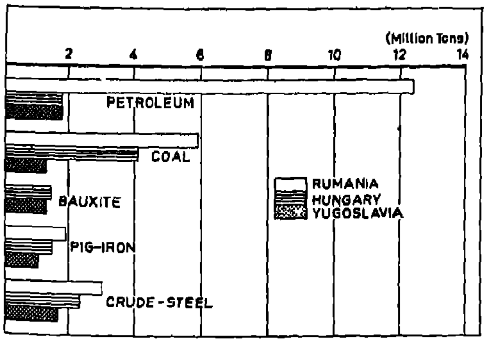
Animal husbandry is an important agricultural activity although it has suffered somewhat because of the lack of incentives.

With over a quarter of its land under forests, the country produces considerable wood and timber.

Rumania is the leading producer of petroleum in Europe excluding the Soviet Union. The oilfield is located in the Carpathian foothills, north of Bucharest In 1964, the output of crude oil was 12 million tonnes and that of natural gas was well over 150,000 million cubic metres. Thus in the production of natural gas it stood next only to the United States, the Soviet Union and Canada. It produces coal, lignite, iron-ore and rock salt These are found in Transylvanian basin.

Fig. 82. Important Mineral and Industrial Products of Rumania, Hungary and Yugoslavia

Note the production of petroleum in Rumania. It also ranks fourth in the world in the production of natural gas. Which countries produce bauxite ?



In 1961, the industry contributed nearly 45 per cent of the national income. The annual rate of growth of industrial production was over 13 per cent during 1950-1960 Among the fast growing industries are iron and steel, machine building, chemicals and fertilizers, food processing and textiles.

The heavy metallurgical industries are located around Reista—the 'steel town' of Rumania.

The city of Bucharest lies in the heart of Valachia and Moldavia lowlands. Galati nearly 100 kilometres inland is an important river port accessible to ocean-going vessels. The delta is still a wilderness, undisturbed by man.

YUGOSLAVIA

Yugoslavia is the largest country of the Balkan Peninsula and is situated on the Adriatic Sea. In size it is smaller than Andhra Pradesh in India. Its total population in 1964 was over 19 million, with an average density of 75 persons per square kilometre.

Serbs, Croats, Slovens, Macedonians and Montenegrains are the important racial groups that constitute this multi-racial, multi-lingual and multi-religious state.

Physical Setting

Approximately four-fifths of the country is mountainous. The Dinaric Alps running north-south through the middle of the country form the backbone of Yugoslavia. These mountains descend laterally to the Adriatic Sea, forming small bays, inlets and natural harbours.

The Adriatic coastal lowlands on the west and the middle Danube Basin in the north-east are the important agricultural lands. These plains are the thickly peopled parts of Yugoslavia.

The Mediterranean type of climate prevails along the Adriatic coast, and in a few inland areas. Central Yugoslavia exposed to the continental air currents of the north has warm summers and cold winters. The precipitation is higher in the north-west and decreases towards the east and the south-east.

The north-western part near the Austrian Alps is heavily wooded, whereas the ranges along Albania and Greece are almost barren. Beech, pine and oak are the principal varieties.

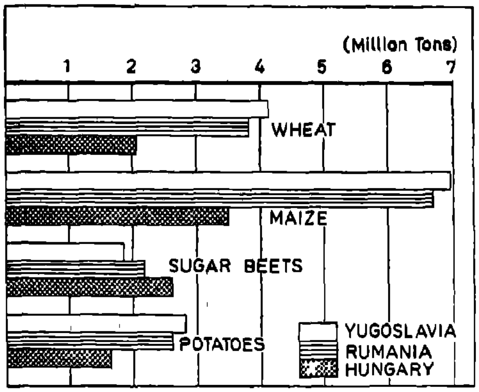
Economic Development

Nearly a third of the total land area is under cultivation, with another quarter under permanent pastures and a third under forests. Half the total population of the country is engaged in agriculture, accounting for a quarter of its total national income.

Wheat, maize, barley, oats and rye are the cereals produced in Yugoslavia. In 1964, it produced 4.1 million tonnes of wheat, 7.7 million tonnes of maize, besides barley, rye and oats. Animal husbandry is an important activity.

Fig. 83. Production of Wheat, Maize, Sugar-beets and Potatoes in Yugoslavia, Rumania and Hungary

Note the relative positions of these countries in wheat and maize. Which country produces more sugar-beets than potatoes ?



Yugoslavia, with nearly a third of its land area under forests, produces timber and wood-pulp.

It is an important producer of lead, antimony, bauxite, mercury, copper, chrome and zinc. The major industries of Yugoslavia are metallurgy, ship-building, chemicals, textiles and food processing. It also produces wines, beer, cheese, butter and tobacco products.

Regions of Yugoslavia

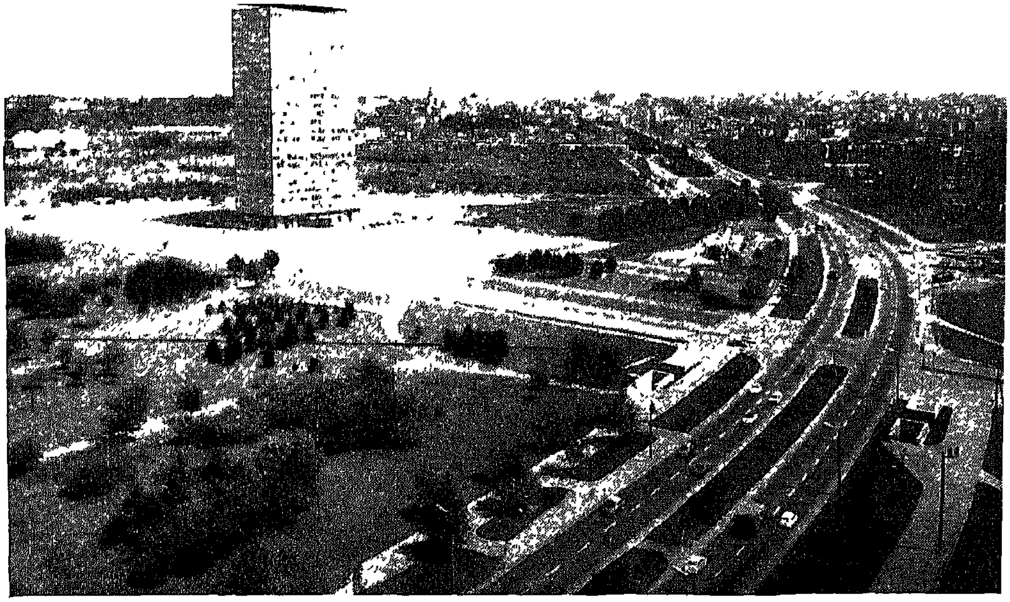
Slovenia in the north-west is a mountainous land with ample rainfall. Forests and pastures dominate the mountainsides, whereas valley floors are devoted to rye, oats, and wheat.

Crotia is a rolling plateau east of Slovenia. It lies between the Sava and Drava rivers The plateau region is covered with forests and timber is the main item of export. The valley slopes and bottoms are intensively cultivated, where plum orchards are very common. Plums are used in making brandy.

The Danube lowlands with fertile black soils are a rich agricultural region of the Balkan Peninsula. Cereals and various cash crops such as sugar-beet, potatoes, flax and fruits are the important crops. Cattle and sheep and pig rearing is an important activity. The fields are interrupted only by big villages with a population of 20,000 to 30,000 people. Zagreb is the leading urban centre of Crotia and stands next only to Belgrade.

Belgrade situated at the confluence of the Danube and the Sava is the leading transport hub of the entire Balkan Peninsula. It is well connected by railways with Budapest, Bucharest, Constantinople, Athens, Trieste and Vienna.

The western Dinaric Mountains rise sharply from the Adriatic shore. Being made of limestone, they form the typical *karst* topography. Running water dissolves limestone in the karst, forming large depressions, 'swallow holes', and underground caves and caverns.

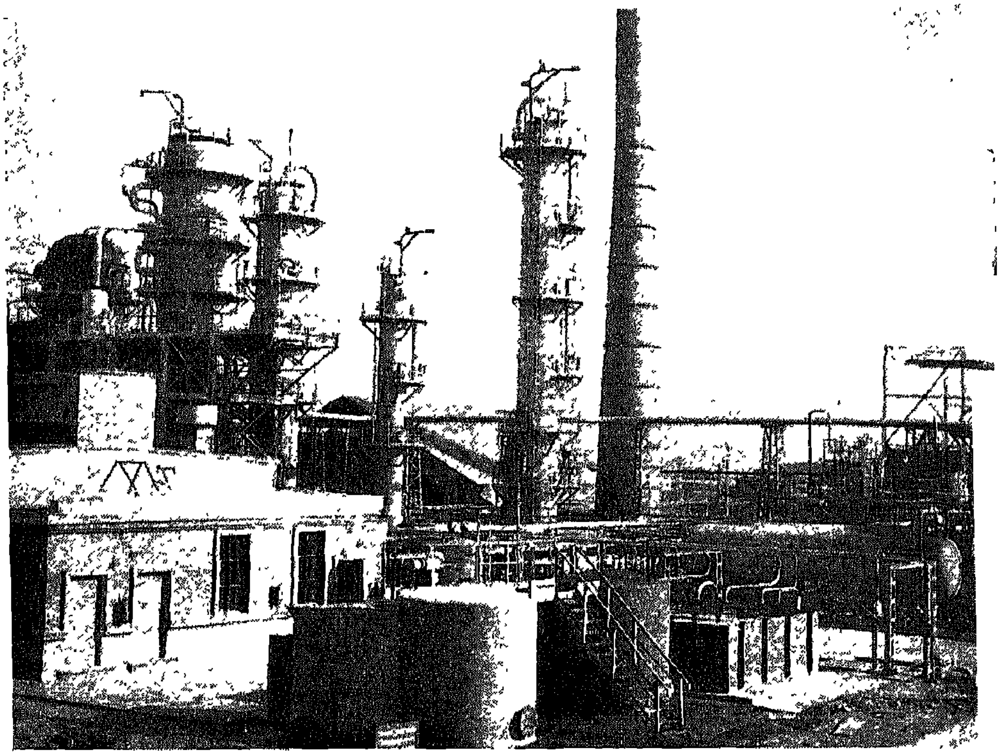


64. The New Township of Belgrade *(Courtesy: Embassy of Yugoslavia, New Delhi)*

This capital city of Yugoslavia is situated on the right bank of the Danube. It is a hub of transport in Balkan peninsula. This well-laid-out new city has modern features such as towering office buildings, wide roads, parks and green belts. Do you see in the picture the openings of the underground ways?

65. Bucharest, the Capital City of Rumania *(Courtesy: Embassy of Rumania, New Delhi)*

This city known for its fine public gardens is an industrial and commercial centre. Its manufactures include machinery, textiles, chemicals and leather and metal goods. This 500-year old city has now a population of over 1.3 million people and accounts for one-fifth of the country's total industrial output.



66. An Oil Refinery in Rumania *(Courtesy: Embassy of Rumania, New Delhi)*

With a production of over 12 million tonnes of crude petroleum every year it is a leading producer of mineral oil in Europe, excluding the Soviet Union. It has a well-developed petro-chemical industry and several such big oil refineries. Can you list a few petroleum products?

67. An Electric Locomotive on the Trans-Siberian Railway *(Courtesy: Information Department, Embassy of the USSR, New Delhi)*

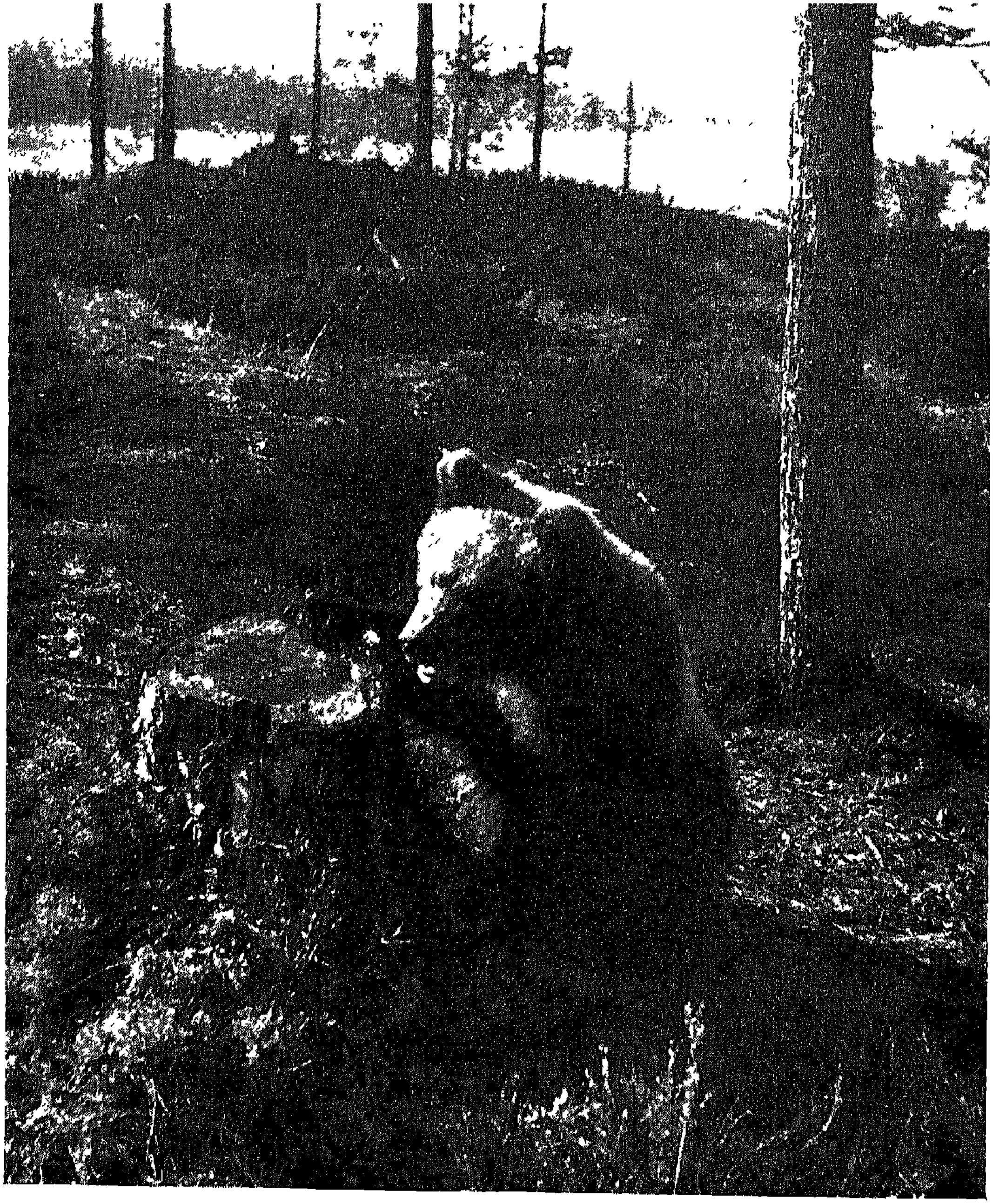
Connecting Moscow with Vladivostok, the Trans-Siberian Railway extends over 9,337 kilometres It is by far the longest railway line in the world. In the Soviet Union nearly 25,000 kilometres of railway lines are electrified. Can you name important railway stations on the Trans-Siberian Railway?

68. Red Square in Moscow *(Courtesy: Information Department, Embassy of the USSR, New Delh*

This is by far the most important part of Moscow, the capital city of the Soviet Union. Kremlin, the old citad is now the seat of federal government. Note the old massive buildings and statues.

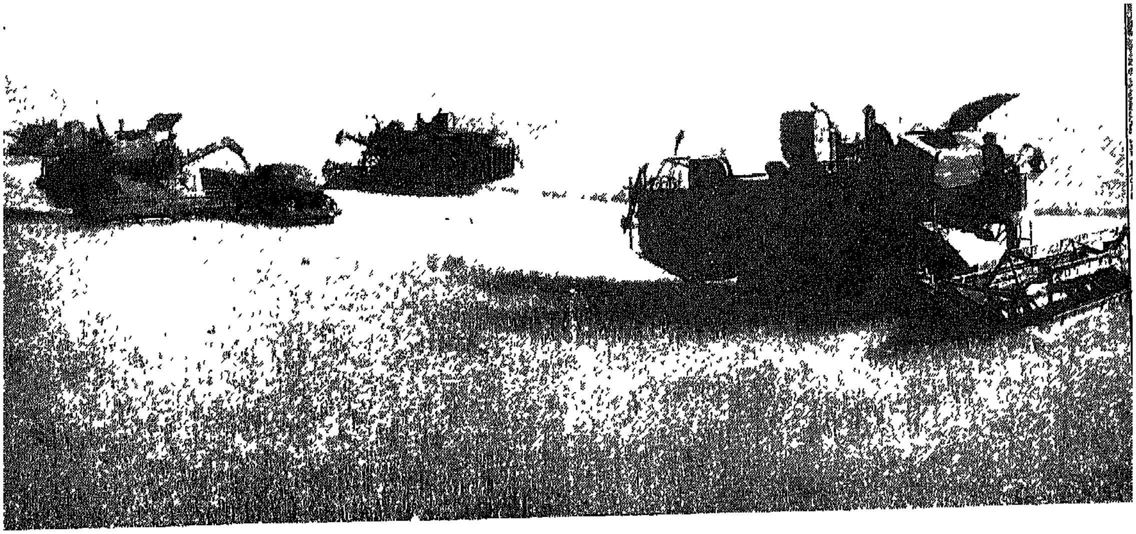
69. Collecting Cocoons on a Collective Farm in Pamirs *(Courtesy: Information Department, Embas of the USSR, New Delhi)*

Sericulture is an important industry in Central Asia since very long. Note the cotton stuffed clothes of an old farn against the background of snow-clad hills in the background. What suggests to you that both the old and the n exist side by side in this part of the world?



70. A Typical Landscape of the Taiga Region *(Courtesy: Information Department, Embassy of the USSR, New Delhi)*

This is a region on the northern shores of Lake Ladoga, not far from the border of Finland. Look at the natural inhabitant of this region who, it seems, does not welcome interference by man. Do you see any signs of man's interference in this region? In what way are these forest lands different from those of the equatorial region?



71. New Wheatlands of North Kazakhistan *(Courtesy. Information Department, Embassy of the USSR, New Delhi)*

Semi-arid grasslands of North Kazakhistan have been recently reclaimed. These virgin lands now yield rich crops of wheat. Note how the giant combines harvest and thresh wheat, and how a truck is being filled with wheat The Soviet Union is today the leading producer of wheat in the world What makes this land in the picture ideally suited for mechanized farming?

72. The River Vakhsh Being Diverted Through a Tunnel *(Courtesy· Information Department, Embassy of the USSR, New Delhi)*

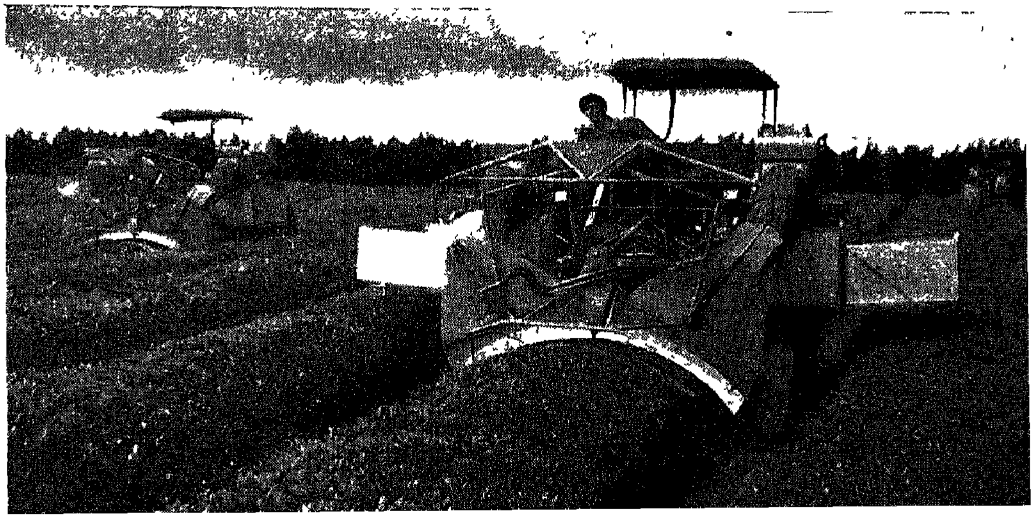
The Vakhsh is a tributary of Amu Darya, also known as Oxus This 640-kilometre long river is being dammed and made to flow through a man-made tunnel Its waters now irrigate large water-thirsty lands in Tadzhikistan and help to grow cotton, fruits and sugar-beets What makes irrigation very necessary in Central Asia?

73. In the Central Siberian Uplands *(Courtesy: Information Department, Embassy of the USSR, New Delhi)*

These are the primary school teachers of a boarding school at one of the trading stations Evanks are the native people of this region Look at the heavy fur clothes worn by the people and the sledges drawn by the reindeer over the snow. What kind of vegetation do you see in the picture?

74. Tea-picking on a State Farm in Georgia *(Courtesy: Information Department, Embassy of the USSR, New Delhi)*

With a production of 45,000 tonnes in 1963 the Soviet Union was the fifth largest producer of tea in the world. Look at the giant mechanized tea-pickers at work and note how they pluck tender leaves How does this tea farm differ from an Asian tea garden?

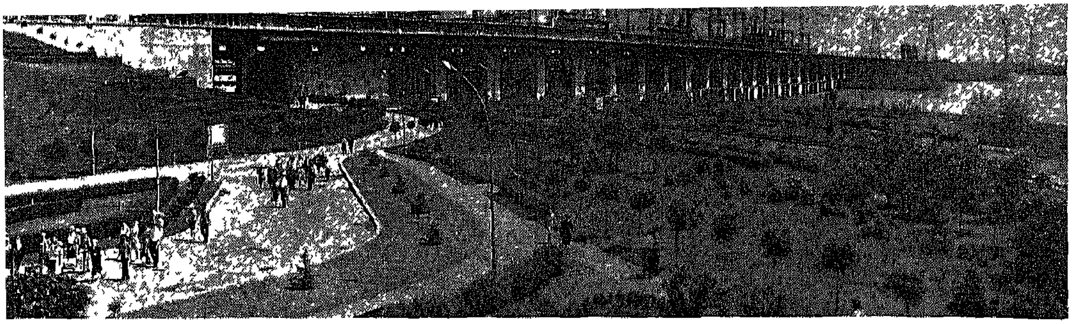


75. Kiev, the Capital City of the Ukrainian Republic *(Courtesy: Information Department, Embassy of the USSR, New Delhi)*

Kiev, which is known to the Russians as "the Mother of Cities", is today the third largest city of the Soviet Union This river-town and a railway junction is an important industrial and distribution centre. Sugar, leather, flour alcohol, tobacco products, glass, cement, machinery and textiles are its major manufactures.

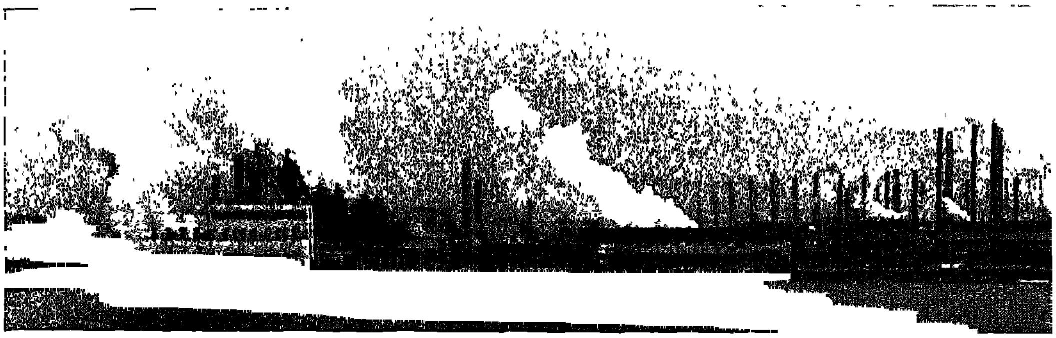
76. Gorky Motor Works *(Courtesy: Information Department, Embassy of the USSR, New Delhi)*

Of late the Soviet Union has entered in a big way in the consumer industries and it now manufactures cars refrigerators, television sets etc. These are Volga cars produced at an automobile plant at Gorky.



7. Volskaya Water-Power Station near Volgograd *(Courtesy: Information Department, Embassy of the USSR, New Delhi)*

his is one of the biggest water-power stations of the Soviet Union. Note the cars, buses and trucks plying over the ridge across the River Volga. The country has a total installed capacity of over 21,000 million kw., nearly six times that of India.

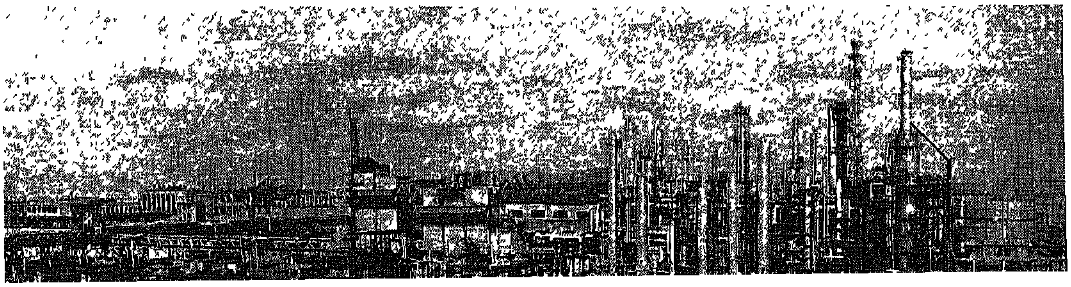


78. Magnitogorsk Iron and Steel Centre in the Urals *(Courtesy: Information Department, Embassy of the USSR, New Delhi)*

This is a section of iron and steel mills. This centre of metallurgical industries is known as Magnita and has now become the pride of the Soviet Union The country now produces over 62 million tonnes of pig-iron and 85 million tonnes of crude steel standing next only to the United States.

9. A Chemical Plant at Sterlitamak *(Courtesy: Information Department, Embassy of the USSR, New Delhi)*

his big chemical plant manufactures acetylene, a powerful illuminant gas from calcium carbide and water. The country is now in the forefront of the chemical industries as well.



Dalmatia is a narrow, coastal region along the Adriatic shore. The region is typically Mediterranean, with sea and mountains, islands and bays lying very close to one another Dry summers and mild rainy winters characterize its climate. Farming, fishing and horticulture are the chief activities of the people.

The basins of Serbia and Macedonia are the core of eastern Yugoslavia. Animal husbandry and subsistence farming are the mainstay of local economy. Macedonia with its warm climate is a region known for its quality tobacco crops.

The Danube breaks through the Transylvanian Mountains through a narrow gorge east of Belgrade. This 90-metre gap is known as Iron-Gate. It offers an ideal site for water reservoir and a hydel-power station that can be one of the largest in the world. The only hitch lies in the needed co-operation between Rumania and Yugoslavia. Large agricultural and mineral resources of the country still remain to be tapped for which concerted efforts are under way.

ALBANIA

Albania, slightly bigger than Manipur, is one of the tiny republics of Europe. It is situated on the west coast of the Balkan Peninsula. The country had a total population of over 1.8 million in 1964, the average density of population being 63 persons per square kilometre. This small and sparsely peopled land is the only European country with a Muslim majority, constituting 73 per cent of the total population. It was the last stronghold of the Turkish Empire in Europe.

Physical Setting

Albania is a mountainous land, with nearly 70 per cent of its area at an elevation of more than 300 metres. The rest of the country consists of a coastal lowland and the lower reaches of the river valleys which merge into the coastal plain. The Dinaric Mountains of Yugoslavia continue southwards into Albania.

The typical Mediterranean climate is found along the coast. The interior, however, has a transitional or modified continental type of climate. The distribution of natural vegetation is governed by the altitude.

Economic Development

In Albania only a sixth of the total land area is under cultivation, nearly a quarter of the land is under permanent pastures, while as much as 45 per cent of the land is under forests.

In spite of a limited arable land, Albania is predominantly an agricultural country. In 1961, about 69 per cent of the population was engaged in agriculture.

The country produces wheat and maize. The commercial crops are tobacco, cotton and sugar-beets.

Shortage of fodder is the main problem as a result of which there is a steady decline in the numbers of livestock.

Mining is another important natural resource. It possesses oil, lignite, asphalt, chromium, copper and some iron-ore It is a leading chrome-producing country of Eastern Europe.

Food-processing industries, such as beer and sugar, were important in Albania. In recent years, however, the emphasis is being laid on heavy and secondary industries such as oil refining, and the manufacture of metals, cement and the textiles.

Tirane is the capital city of Albania with a population of over 130,000 people. Nearly 70 per cent people live in the rural countryside.

BULGARIA

With an area comparable to that of Assam, Bulgaria occupies the north-eastern part of the Balkan Peninsula. The total population of Bulgaria was over 8 million in 1964, the average density of population being 74 persons per square kilometre.

Physical Setting

Bulgaria consists of three roughly parallel east-west topographic regions. In the north lies the Danubian tableland. The Balkan Mountains run east-west across the middle of the country. The Thracian Plain drained by the Maritsa River lies to the south of the Balkan Mountains In addition to these three east-west parallel belts, the south-western part of the country is occupied by Rhodope Mountains.

The Balkan Mountains serve as a climatic divide. The Danubian tableland in the north has a continental type of climate Winters are severe in this part as the land is exposed to the cold winter winds of the north. The Thracian Plain protected by the Balkan Mountains on the north has a modified Mediterranean climate and is free from northern frosts.

Economic Development

The country has nearly 41 per cent of its total land area under permanent crops, another 10 per cent under pastures and meadows and 32 per cent under forests. Nearly 55 per cent of the population is engaged in agriculture. Agriculture now contributes about 27 per cent of the total national income, whereas before World War II its share was as high as 75 per cent This is mainly because of the rapid growth of its industries.

Nearly two-thirds of the total area is sown in grain It produces wheat, maize, barley and oats The important commercial crops are tobacco, potatoes, sunflower seeds, sugar-beets and crops like early vegetables, fruits, and roses. The skill of the Bulgarian farmers in horticulture and truck gardening has turned the Danubian plateau into a vegetable garden, making it a land of thriving agriculture The Danube offers a quick means of transport, so essential for the export of this agricultural produce.

The valleys south of the Balkan Mountains are known for their rose culture. Sheltered from the northern cold winds the warm and sunny slopes of the valleys are covered with rose gardens stretching for miles. The rose oil sustains a flourishing perfume industry. Rose oil is an important item of export of Bulgaria

Nearly a third of its total land area is under forests, and the country is self-sufficient in its lumber requirements.

Lignite is the most important mineral resource of the country In 1964, its output of lignite was well over 24 million tonnes. It also produces mineral oil and iron-ore, besides some lead, zinc and copper.

Its industries in order of their importance are food processing, textiles and machine building Effort is being made to assign first place to machine building industry. The country now produces pig-iron and crude steel. Tobacco, textiles, and canned-fruits and vegetables are the major exports.

Besides being a mighty waterway for commerce, the Danube river forms a boundary between Rumania and Bulgaria. All along the frontier between the two countries it is without a bridge

Sofia lies within a high basin formed by the Balkan Mountains and the Rhodope Uplands. It is an important railway junction, as several railway routes converge on this capital city of Bulgaria.

TURKEY IN EUROPE

With a small area, Turkey still maintains a foothold in Europe. It is the remnant of a big Empire which Turkey possessed in the Balkan Peninsula up to the Adriatic Sea. It is separated from Asian Turkey by the Strait of Bosphorus, the Sea of Marmara and the narrow channel of Dardanelles, supposed to be the drowned river valleys This narrow sea passage links the Mediterranean with the Black Sea.

The low basin area is dry and is covered with steppe vegetation. Sheep and goat rearing and subsistence agriculture are the main activities The city of Istanbul which is a fine, spacious and natural harbour was formerly the capital of the Eastern Roman Empire and subsequently of the Ottoman or Turkish Empire. It controls the gateway to the Black Sea. This cosmopolitan city spread on two continents, both Europe and Asia, has a population of a million and a half.

EXERCISES

Review Questions

1. Answer the following questions briefly:
   (*i*) Which is the leading river of South-eastern Europe?
   (*ii*) What is Iron Gate?
   (*iii*) Name the capital city of Rumania
   (*iv*) Which are the three major crops of Hungary?
2. Give reasons:
   (*i*) South-eastern Europe is a land where western and eastern cultures meet.
   (*ii*) The delta of the Danube is still a wilderness untouched by man.
   (*iii*) Yugoslavia, although stands on the Mediterranean Sea, does not enjoy a typical Mediterranean climate.
3 Make out correct pairs from the two columns:

(A)	(*i*) Once the granary of Europe.	Rumania
	(*ii*) A leading producer of oil and gas in Europe.	Albania
	(*iii*) A European country with the Muslim majority.	Bulgaria
	(*iv*) A country known for its vegetable gardens and rose culture.	Hungary
	(*v*) A country of contrasts.	Yugoslavia

(B)	(*i*) A city of two continents	Budapest
	(*ii*) The 'steeltown' of Rumania.	Galati
	(*iii*) A "ford city" across the Danube.	Belgrade
	(*iv*) A river port accessible by ocean-going vessels.	Sofia
	(*v*) Leading transport hub of the Balkan Peninsula	Istanbul
	(*vi*) An important railway junction.	Resita

4. Give a technical term for each of the following:
   (*i*) A funnel-shaped depression in a limestone region resulting from the collapse of the surface into an underground hollow.
   (*ii*) A large limestone cave formed by solution due to underground water.
   (*iii*) Barren limestone plateau marked by abrupt ridges, caverns, sink holes and swallow holes.
5. Describe the climate of South-eastern Europe pointing out how it is different from that of Central, Eastern and Southern Europe
6 Give a brief account of agriculture and industry of South-eastern Europe highlighting current trends in them.

Finding Out

7. Collect information on the importance which the city of Istanbul (Constantinople) achieved throughout history because of its strategic position.

Cartographic Work

8. Draw a map of South-eastern Europe showing various countries, the river Danube, and distribution of crops and minerals.

Picture Reading

9. Study pictures 27 and 63 to 66 and see how South-east European countries have been making rapid progress in agriculture, industry, and transport.

Films Available

(*i*) Novelties in our Fields. English; Y E.I.
(*ii*) Treasure in Mountains. English; Y.E.I
(*iii*) The Tamed Waters. English; Y.E I.
(*iv*) Truth Born in the Steel. English; Y.E.I.
(*v*) Industry of Yugoslavia. English; Y.E.I.
(*vi*) Towards the Oceans English; Y.E.I

Further Readings

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UNIT THREE

The Soviet Union

The Soviet Union, the largest country of the world, is bigger than the combined area of Canada and China which rank second and third in size respectively. It is one of the two most powerful nations of our times.

Owing to its location and the development of its huge natural and human resources, the Soviet Union is a force to reckon with both in Asia and Europe.

Separated by its mountain periphery from the rest of Asia, it is a subcontinent by itself. The low and worn-out Ural Mountains, which are generally recognized as the divide between Europe and Asia, are but a poor physical barrier. They are neither an ethnic nor a climatic divide.

In spite of its huge size, accounting for nearly a seventh of the earth's land surface, its relief is remarkably monotonous. The climate is rather uniformly harsh and continental.

The Soviet Union possesses the greatest reserves of virgin and useful forests. The coniferous forests of the Taiga region abound in fur-bearing animals.

The country leads the world in the production of cereals, grown in mid-and-high latitudes—wheat, rye and barley. It is also a leading producer of sugar-beet, potato, flax and sunflower seed Also considerable is its production of maize, cotton, cotton-seed and oats. This is a remarkable achievement in so far as only one-tenth of its land area is under permanent crops and barely two-fifths of its population is engaged in agriculture.

The Soviet Union is equally rich in its mineral wealth. It claims to possess the world's largest reserves of gold, iron and manganese. In actual production it ranks first with regard to iron and manganese-ore. It stands second in respect of coal, lignite, crude petroleum, bauxite and tungsten. In the manufacture of pig-iron and crude steel it is surpassed only by the United States. Its potential water-power resources are about one-ninth the world's total—second only to that of the Congo in Africa

The country has made rapid strides both in agriculture and industry. The successful transformation of an agricultural people into a mighty industrial nation within a short span of 40 years is ascribed to its economic, social and political institutions based on socialism.

In the pages that follow you may seek answers to many of your questions such as: What makes the Soviet Union a force to reckon with, both in Europe and Asia ? Why is it necessary for this country to have as many as eleven time zones ? How is it that the "cold pole" of the Northern Hemisphere is not near the geographic pole but close to the Arctic Circle in north-eastern Siberia ? Why is the mean annual range of temperature very high in almost all parts of the Soviet Union ? What makes agricultural production fluctuate considerably from year to year ? Why are certain parts of the Soviet Union, like the Urals, highly mineralized ? What are collective farms and how do they differ from state farms ?

CHAPTER 12

Land and Climate

THE Union of Soviet Socialist Republics, commonly known as the Soviet Union, is a giant among the nations. Occupying nearly one-seventh of the land surface of the earth, it has an area of over 22 million square kilometres. It is nearly seven times the size of India.

The Soviet Union is one of the two leading powerful nations of the world, the United States of America being the other. Since the Russian Revolution of 1917, the country has made tremendous progress in agriculture, industry, scientific research and technology. Like the United States, the country today is in the fore-front of space exploration.

The Soviet Union is known for its unique social, economic and political systems based on the philosophy of socialism. The rapid progress made by its people in industries and other fields is ascribed to its planned economy and nationalization of key resources, including the basic means of production. The Communist Party of the Soviet Union is the only political party It provides federal and local governments to manage the affairs of the State on behalf of its people.

The Soviet Union, a home of several nationalities, is a Union of fifteen autonomous republics.

Location and Extent

The Soviet Union extends from 19°30′ east longitude on the west to 169°30′ west longitude on the east—a stretch of 171 degree. From Kaliningrad in the west to the Strait of Bering in the east, it extends over 8,800 kilometres. This is a distance that is covered by an express train in a period of nine-and-a-half days. The time difference between its eastern and western borders is over 11 hours.

The latitudinal expanse of the country is relatively narrow, about 4,400 kilometres, as it extends between the latitudes of 35°15′ N and 77°35′ N. The bulk of the country, however, is situated north of the 50th parallel.

The Soviet Union is bordered by the Arctic Ocean in the north, the Baltic Sea on the north-west, the Black Sea and the land-locked Caspian Sea on the south-west, and the Pacific on the east. Although endowed with a coastline of 43,000 kilometres, the longest for any single country, the Soviet Union has virtually no all-weather port with a direct access to the great oceans of the world. This partly explains why the Soviet Union has remained primarily a land power.

The Soviet Union has common frontiers with a dozen countries in Europe and Asia. Name

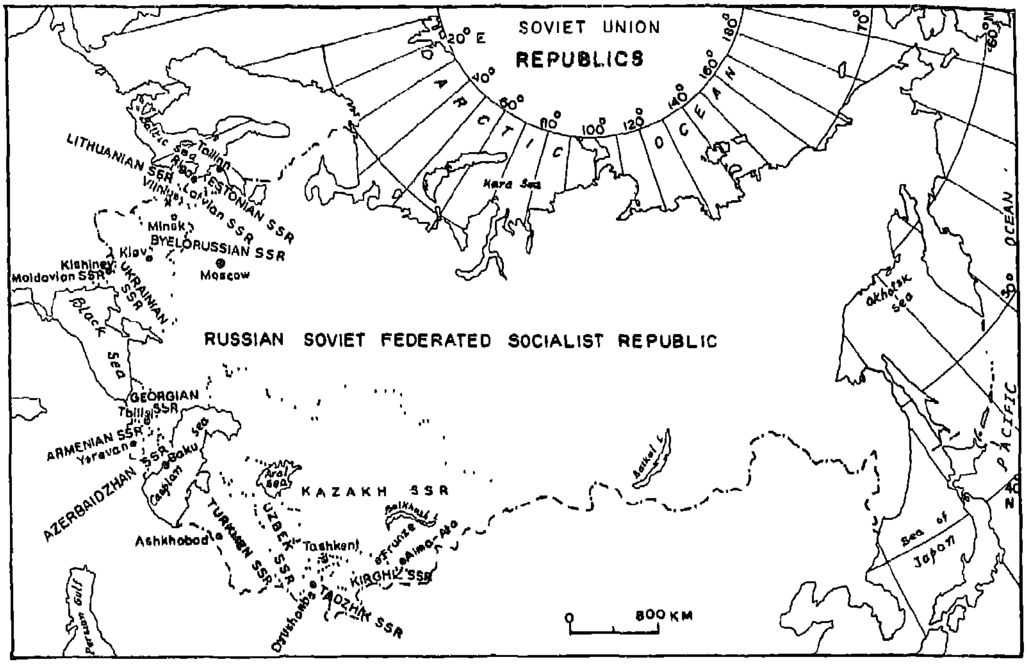


Fig. 84. The Union of the Soviet Socialist Republics—Political

Note that the bulk of the area of the Soviet Union lies beyond 50°N latitude. What makes the Russian Soviet Federated Socialist Republic the most important among the 15 republics of the Soviet Union ?

these countries from north-west to south-east. Across the Sea of Japan and the Bering Strait it faces Japan and the United States of America, or Alaska in particular. It is here that the two world giants are closest to each other—less than five kilometres apart.

Occupying nearly 45 per cent of Asia and about 40 per cent of Europe, the Soviet Union is a subcontinent in its own right. Of its total population of 227 million people, nearly three-fourths live in the European part.

Relief and Physical Divisions

Surrounded by high mountains on the south and east, the whole of the Soviet Union is like an amphitheatre which gently slopes northward to the Arctic Ocean. Barring the mountains situated all along its southern borders, the Soviet Union consists of vast expanses of low plains and ancient plateaus of low elevation.

The five important physical units of the Soviet Union are: (*i*) the Plains of Eastern Europe, (*ii*) the West Siberian Plain, (*iii*) the Caspian-Turan Lowland, (*iv*) the Central Siberian Upland, and (*v*) the Mountain Rim.

The relief of the Soviet Union has been considerably influenced by ice sheets of the Ice Ages, and the deposits left by them on their retreat. The continuous moraine deposits have formed low ridges, and bifurcated river channels. The ice sheets and glaciers have scooped shallow depressions now occupied by lakes and swamps. The water flowing from the retreating ice sheets sorted out the material, depositing it in the form of layers of clay, sand and boulders at

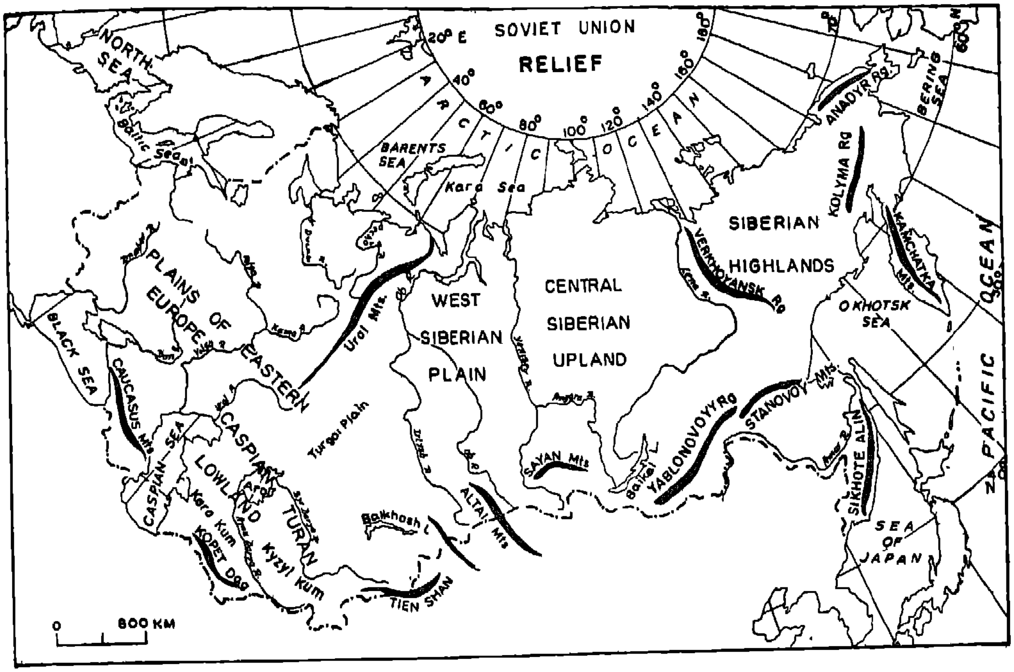


Fig. 85. The Soviet Union—Relief and Physical Divisions

Surrounded by high mountains along its southern periphery, the Soviet Union is essentially a flat lowland sloping gently towards the Arctic. Locate the major physical divisions. Why is the Soviet Union said to be a subcontinent in its own right ?

different places. The finest material was later on blown over and was redeposited as loess in far-off places.

The Plains of Eastern Europe: Touching the Arctic Ocean in the north and the Black Sea and the Caspian in the south, this plain is the largest in Europe. Westwards it merges into the Plain of Central Europe, whereas in the east it is bounded by the old Ural Mountains.

This low-lying, rolling plain is drained by a large number of rivers, flowing in different directions before emptying in the seas bordering the Great Plain. The low ridges traversing this region are the glacial deposits, or moraines, left over by the retreating ice sheets of the Ice Age. These morainic ridges work as low water-sheds between these rivers. As a result of glaciation there are a large number of lakes and swamps, especially in the north and the west. It indicates that the region is poorly drained.

The river West Dvina flows into the Baltic, the North Dvina into the White Sea and the Pechora into the Kara Sea. The River Dnieper empties into the Black Sea, the Don into the Sea of Azov, whereas the Volga the largest European river falls into the Caspian.

This plain is the core, or the heart, of the Soviet Union and contains Russia proper In this part lies the most important agricultural and thickly populated region of the whole country.

The West Siberian Plain: Broadly extending from the Urals in the west to the Yenisey in the east is a flat lowland drained by the river Ob. Stretching for about 1,900 kilometres west to east and nearly 2,400 kilometres north to south, the West Siberian Plain slopes very gently towards the Arctic in the north. The northern part of the plain was once occupied by a huge glacial lake. This old featureless lake-bed is now a marshy lowland traversed by meandering rivers, leisurely making their way to the Arctic. There are large waterlogged areas in this poorly drained plain.

As the lower courses of these north-flowing rivers are frozen earlier than their upper courses, the rivers cause widespread floods in their middle and lower reaches during the early part of the winter. Similarly, in early summer the melting snow in the upper reaches is responsible for floods in their lower basins.

The Ural Mountains, separating the West Siberian Plain from the Plain of Eastern Europe, are old mountains like the Aravallis in India. To-day, they are worn down mountains, consisting mostly of rounded hills. They rise to the maximum elevation of about 1,600 metres.

The Caspian-Turan Lowland: This extremely low-lying region was once a part of a large ocean basin of which the Mediterranean, the Black Sea, the Caspian and the Aral Sea are but the remnants.

The Caspian lowland is a flat monotonous plain, occupying the bed of the ancient Caspian Sea that was once far bigger than what it is today. About a third of this plain is below sea level The Caspian itself is about 25 metres below sea level The rivers Volga and Ural, flowing through this plain, drain into the Caspian.

The Turan Lowlands surround the Aral Sea and are also known as Aral lowlands The Amu Darya and the Syr Darya are the chief rivers draining this lowland. The lowlands also include the Deserts of Kara Kum (which means Black Sands), and Kyzyl Kum (meaning Red Sands). East of the Syr Darya lies Hunger Steppe where the rivers on entering the piedmont plain disappear beneath the desert.

The Caspian-Turan Lowlands are bounded by the Ural and Kazakh Uplands in the north and the high plateau of Pamirs and the Tien Shan mountains in the south.

The Turgai Pass between the Ural and Kazakh Uplands provide a natural access to the West Siberian Lowland in the north. The Balkhash Plain in the east offers a natural route to China.

The Central Siberian Upland: Lying between the Yenisey in the west and the Lena in the east is the old stable landmass of the Central Siberian Upland. It is comparable to the Canadian Shield. This low plateau is traversed by low ridges. In fact, it is the erosion that has given this region a mountainous appearance. Much of the upland is a forested region.

The Mountain Rim: East of the river Lena lie the high mountain ranges of Eastern Siberia. The Kamchatka peninsula in the extreme east is an area of earthquakes and volcanoes, similar to that of Japan.

The mountains surrounding the low basins, including the Central Siberian Upland, are very old. Because of long continued denudation they are, very often, no more than low rounded hills. Important among them are the Urals, Tien Shan, Kazakh Upland, Altai Range and the Sayan Mountains.

The outermost mountains in the southern Soviet Union are the Caucasus, the Kopet Dag and the Pamirs. Geologically they are the youngest mountains—very high and rugged. Mt Elbrus in the Caucasus and Peak Communism and Mt. Lenin in the Pamirs are the highest peaks ranging between 5,500 and 7,200 metres above sea level.

Climate

The freezing of rivers, lakes and coastal waters over large areas is an indication of harsh climate from which the Soviet Union suffers The country is little affected by the tempering influence of the Atlantic and Pacific Oceans This together with its huge size is responsible for its extremely continental type of climate. The mean annual range of temperature is 30°C at Moscow and 65°C at Verkhoyansk in north-eastern Siberia.

Winter is long and the most clearly marked

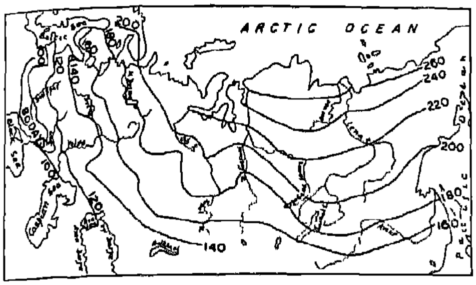


Fig. 86. The Average Number of Days the Rivers in the Soviet Union are Frozen in a Year (After W. G. Kendrew)

What inferences regarding the climate of the Soviet Union can be drawn from this map ? Why do the Siberian rivers cause widespread floods in their middle and lower reaches during early parts of both winter and summer ?

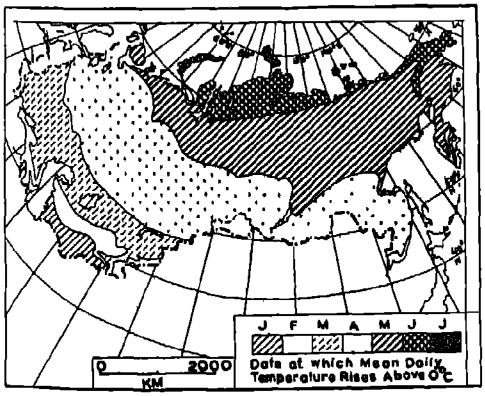
season of the Soviet Union when bitter cold waves sweep southwards across the country. The only areas where the mean January temperature is above freezing point are the sheltered areas in the Crimea and Caucasus.

The snowfall occurs for about five to nine months throughout Siberia and between three to seven months in Soviet Europe. However, the snowfall is not very heavy, since the weather is mostly dry and sunny, as a result of a well developed high pressure located over the Siberian land mass. Such dry cold is generally more unbearable than wet cold.

Temperatures during winter generally decrease from south-west to north-east. It is north-eastern Siberia which is the coldest part not only of the Soviet Union, but also of the entire Northern Hemisphere. Verkhoyansk, situated near the Arctic Circle in north-eastern Siberia, is the "cold pole" of the Northern Hemisphere where the lowest temperature of —70°C is on record.

Fig. 87. Dates at which Mean Daily Temperature Rises above 0°C in the Soviet Union (After S. S Balzak, V. F. Vasyutin and Y. G Feigin)

Note that the climate begins to warm up steadily from south to north, taking more than five months, from January in south-west to July in extreme north. How do the seas in the north and north-east influence the climate of North and East Siberia ?



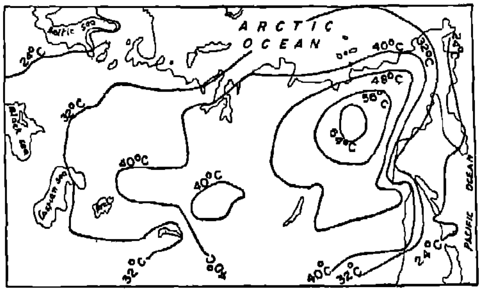


Fig. 88. The Soviet Union—Mean Range of Annual Temperature (After W. G Kendrew)

Note that the maximum range of temperature is found in north-eastern Siberia. Why is it so ?

If the winters are very cold in the Soviet Union the summers also are rather hot for its latitudes. The summers are very hot in the steppe and the desert regions of the Caspian-Turan lowlands, where temperatures shoot up to as much as 49°C, and the mean monthly temperature in July remains over 26°C Even in the lands within the Arctic Circle the mean monthly temperatures of summer are 10°C to 15°C, mainly as a result of long sunny days. Thus the northern lands of the Soviet Union enjoy short but warm summers Temperatures during this season decrease generally from south to north.

A large part of the Soviet Union receives precipitation during the short summers when the depressions originating in the Atlantic move inland The rainfall on the whole decreases from west to east. The region enjoying heavy precipitation between 40 and 100 centimetres is bounded by the lines joining Murmansk in the north-west, Irkutsk on Lake Baikal in Central Siberia in the east and Odessa in the Ukraine, in the south-west. The lowest annual rainfall of less than 20 centimetres is confined to north-eastern Siberia and the Caspian-Turan lowland.

Similarly, rain-bearing winds from the Pacific in the east cause rainfall in the eastern mountains but these mountains prevent the rainfall reaching the interior.

The winter rainfall is confined to the north-east coast of the Black Sea which resembles the Mediterranean type of climate. The heaviest rainfall occurs in the Caucasus. The other mountainous areas also receive heavy rain as compared to their adjacent lowlands.

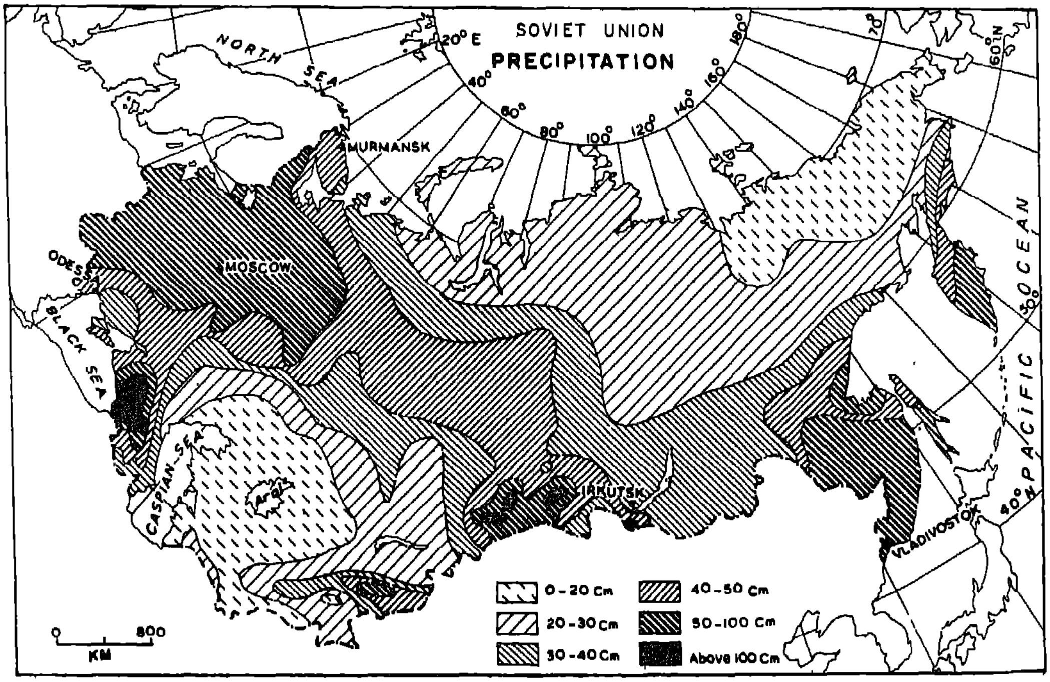
The growing season in the Caspian-Turan lowlands is as long as 200 days; in the Ukraine it is 180 days; 120 days in the northern part of the Soviet Europe and only 60 days in north-eastern Siberia.

Plant and Animal Life

The general monotony of relief is reflected in relatively uniform climatic conditions in the Soviet Union. As a result, the vegetation zones succeed each other more or less in a regular

Fig. 89. The Soviet Union—Mean Annual Precipitation (After O. W. Freeman and J. W. Morris)

Note the distribution of annual precipitation in the Soviet Union. How will you account for a fairly heavy rainfall in a triangular region bounded by lines joining Murmansk, Odessa and Irkutsk ? When does it rain most in this region ?



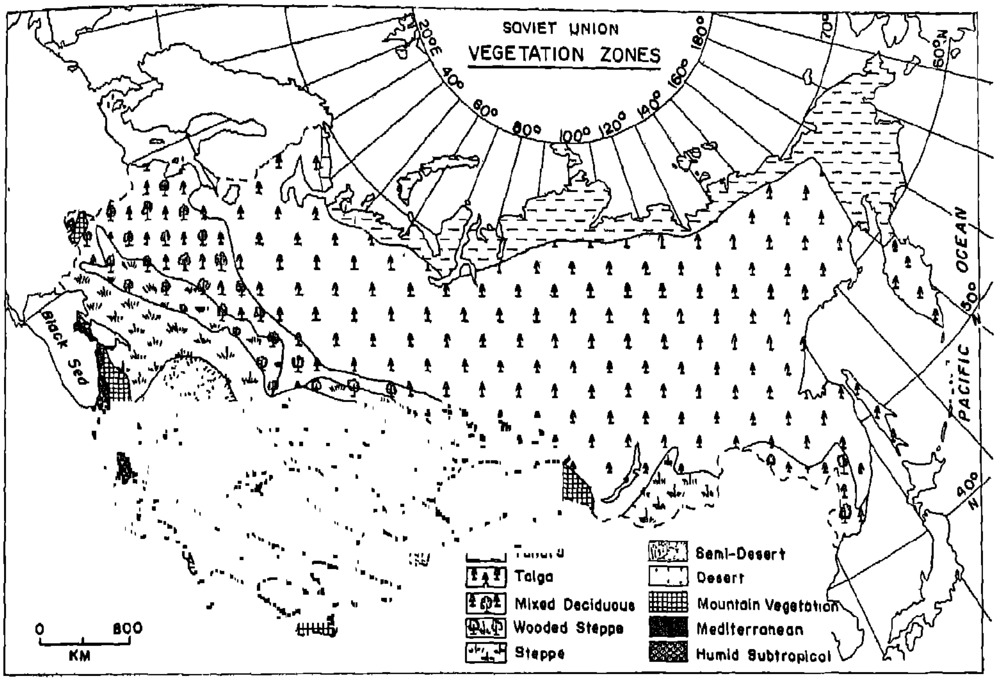


Fig. 90. The Soviet Union—Vegetation Zones

Note the succession of vegetation belts from north to south. Which vegetation belt corresponds closely with the rich farmlands of the Soviet Union ?

sequence from north to south. They are: the tundra, the taiga, the mixed forests, the steppe and the desert vegetation belts. There is a close correlation between these vegetation zones and the climatic regions of the Soviet Union

The **tundra** vegetation belt, covering about one-eighth of the Soviet Union, extends from the Norwegian border in the west to the Kamchatka Peninsula in the east. Here the subsoil is frozen and the only plants that can grow are mosses and lichens In the south they give place gradually to grasses and bushes of dwarf varieties.

In the extreme north, mammals associated with the cold sea are common. They include polar bear, bearded seal, sea calf, seal and walrus. Tundra is the home of the reindeer and the Arctic fox. White hare and lemming are not uncommon.

The **taiga** vegetation consists of coniferous trees. This forest belt covers about half the Soviet Union It forms the largest untouched or virgin forests of the world Spruces, firs, larches and pines are the dominant species.

The fur-bearing animals like foxes, sables and squirrels are very common in these forests. Moose, Russian bear and lynx are the other animals found in this region.

The **mixed forests**, lying to the south of the taiga, comprise both deciduous and coniferous trees. Towards the south these forests give way to wooded steppe, especially in the west. The deciduous trees in this region are oak, maple, elm and ash They are found mixed with the conifers of the taiga belt.

Wild boar, roe deer, red deer and mink constitute the common fauna of this region.

The **steppe** is generally divided into wooded steppe, the true steppe and the desert steppe from north to south In the wooded steppe, open grasslands alternate with tree groves The steppe proper is a treeless rolling grassland The wooded steppe and true steppe account for nearly one-fifth of the Soviet territory, which now forms its granary. The steppe vegetation in the south is gradually replaced by semi-desertic vegetation consisting of grasses and clumps of herbage.

Rat-like rodents, wild cats and antelopes are common in this treeless region.

The desert vegetation is confined to the Caspian-Turan lowlands, extending up to the foothills of mountains in the south and southeast. Wormwood, feather grass and bushes are interspersed with salt marshes.

Wild ass, gazelle, sand cat, cheetah and sand rats are the animals that belong to this region

The southern Crimea has a Mediterranean type of vegetation. Along the shores of the Black Sea, broad-leaved evergreen trees and shrubs are very common. The mountain periphery of the Soviet Union has a still greater variety of vegetation.

Mountain goat, antelope, wild boar, porcupine and leopard are typical animals, especially of the Caucasus.

Soils

The soils of the tundra region are exceedingly poor. The subsoils are permanently frozen, very often to a depth of hundred metres. This affects drainage. The permanently frozen subsoils have an adverse effect on road building, construction of homes and on any efforts to grow crops.

Further south, the humus content begins to increase gradually. In the taiga region the soils are sandy and acidic. They need large doses of lime to counteract the acidity

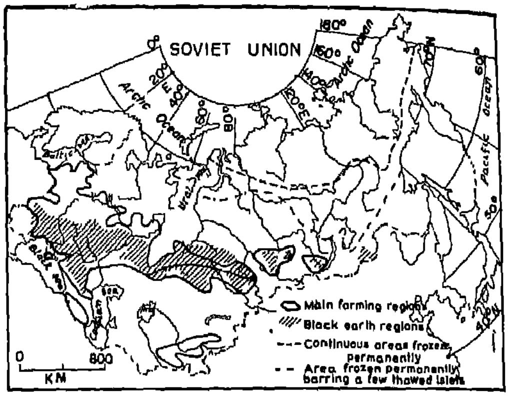


Fig. 91. The Soviet Union—The Black Soil Belt and Perpetually Frozen Grounds

Note that the farming regions of the Soviet Union coincide largely with the black soil belt. What correlation do you find between this map and the one showing annual precipitation ?

In the mixed forest belt the soils are generally gray-brown. They contain more humus and are more fertile than the taiga soils

Further south in the steppe region the soils are typically black to chocolate-brown. These soils contain humus in the upper layers and are rich in calcium carbonate underneath. The soils, locally known as *chernozems*, are among the most fertile soils in the world. It is in this belt that the best farmlands of the Soviet Union are found.

The grey desert soils are rich in carbonate of lime and other fertilizing salts When irrigated they become very productive. Usually the humus content is low in these soils. The salt marshes in deserts have alkaline soils.

In the rainy subtropical areas of the Caucasus and the Black Sea coast, the soils are red-yellow earths. They resemble the laterite soils of the rainy tropics,

EXERCISES

Review Questions

1. Answer the following questions briefly:
   (*i*) Name the five physical units into which the Soviet Union can be divided.
   (*ii*) How many time zones are there in the Soviet Union ?
   (*iii*) Which is the most important republic in the Svoiet Union in respect of area, population and natural resources ?
2 Give reasons:
   (*i*) The Soviet Union is a subcontinent in its own right.
   (*ii*) The Soviet Union has remained primarily a land power in spite of its longest coastline in the world.
   (*iii*) Siberian rivers cause widespread floods in their middle and lower reaches during early parts of winter and summer.
3. Give a correct one-word technical term for each of the following:
   (*i*) The region within the Arctic Circle where the natural vegetation consists of mosses, lichen and stunted trees.
   (*ii*) The swampy forestland with trees bearing cones and needle-like leaves.
   (*iii*) The treeless short grasslands in semi-arid areas.
   (*iv*) Black to chocolate-brown soils containing humus in upper layers and rich calcium carbonates beneath.
4. Complete the following statement with a correct ending:
   The Ural Mountains are geographically very important because
   (*a*) they serve as a store house of minerals.
   (*b*) they serve as a natural boundary between Europe and Asia.
   (*c*) they serve as a climatic barrier between European part of the Soviet Union and Siberia.
   (*d*) they serve as an ethnic divide between the European people on one hand and the Asian on the other.
5 Divide the Soviet Union into suitable physical units and give a detailed account of relief and drainage of East European Plains and the Caspian-Turan Lowlands.
6. Describe briefly the vegetation belts of the Soviet Union, bringing out how the plant and animal life in each region is closely related to the climatic conditions.

Finding Out

7. Collect information on the efforts that are being made to extend the northern limit of agriculture in the Soviet Union. What are the major problems involved in this regard ?

Cartographic Work

8. Draw an outline map of the Soviet Union On your map name all the countries with which it has common frontiers and mention the population of each country. How far do you think that the Soviet Union is a force to reckon with both in Europe and Asia and, for that matter, in the world ?

Picture Reading

9. Study carefully the pictures No. 67 to 79 and write down what physical division and vegetation zone each one of them belongs to.

Films Available

(*i*) Soviet Union: The Land and People. No. 338.1; 16 mins; English; D.T A.
(*ii*) Bountiful Soil. No. 56; 20 mins; English; I.D.E. USSR.
(*iii*) Sunny Shore No. 51; 20 mins; English; I.D.E. USSR
(*iv*) Winter in Moscow. No 7; 10 mins; English; I.D.E. USSR

Further Readings

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CHAPTER 13

Economic Development

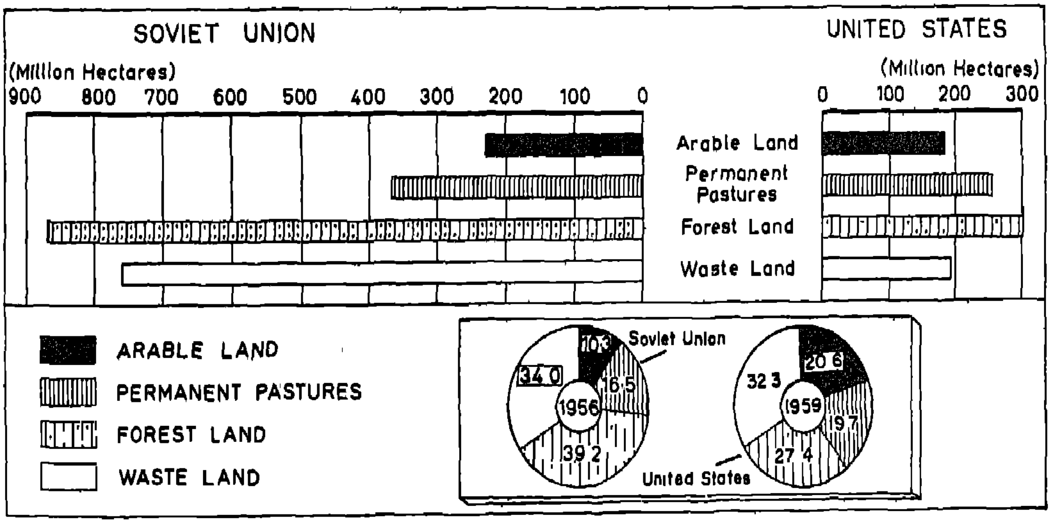
ENDOWED with rich natural and human resources, the Soviet Union has made rapid strides in its economy After the Revolution of 1917, it has succeeded in transforming a predominantly agricultural society into a highly industrialized and powerful nation.

Agriculture

In 1962, the country had about 40 per cent of its area under forests. Nearly another 35 per cent of the land was classified as wasteland. Out of the remaining 25 per cent of the total

Fig. 92. Land Use Patterns of the Soviet Union and the United States

Note the absolute figures for the arable land in the two countries. Which of the two countries possesses a more balanced land use pattern ? How will you account for the same ?



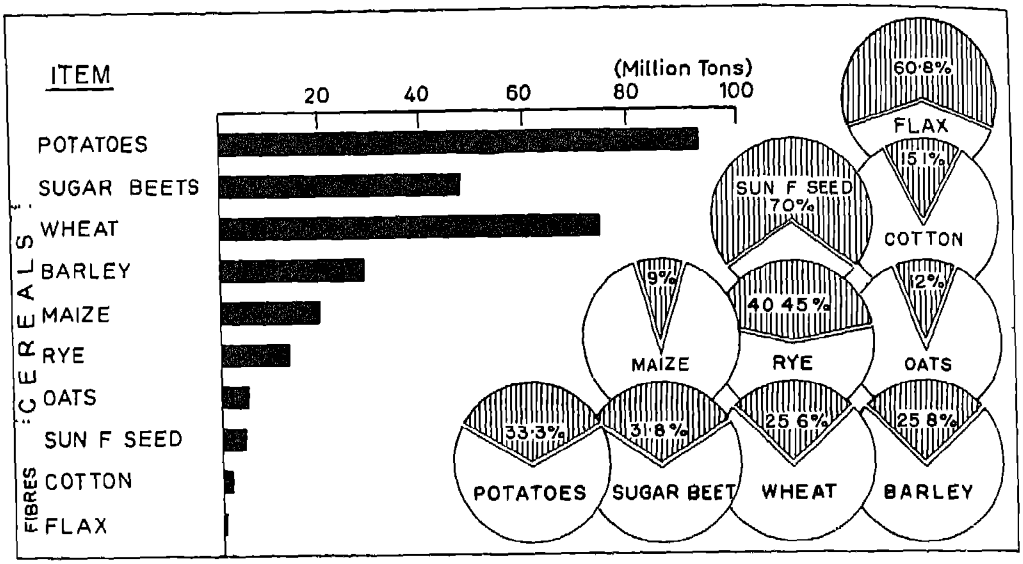


Fig. 93. Agricultural Production of the Soviet Union (1964)

Note the total production of each item carefully. How many per cent of the world production of flax, rye and potatoes does it produce ?

land area, only 10 per cent, that is 230 million hectares, was under permanent crops; and the rest, that is about 15 per cent, was under permanent meadows and pastures.

For several years, the Soviet Union has been the world's leading producer of wheat, rye, barley, sugar-beet, potato, flax and sunflower seed.

The Soviet Union accounts for between one-fourth and one-eighth of the total world produce of wheat. The country produces nearly two-fifths of the world's rye. The production of barley is also about one-fourth the world's total. In respect of both sugar-beet and potato it has to its credit nearly a third of the world's production. It is in a dominating position in respect of flax and sunflower seed, with 60 to 70 per cent of the world's output.

The Soviet Union ranks second in the production of cotton, cottonseed and maize, standing next only to the United States. In the production of oats it holds the third position, next only to the United States and Canada.

The Soviet Union today has less than 39 per cent of its population engaged in agriculture as against 57 per cent in 1937.

The Soviet agriculture suffers from several natural limitations such as very infertile or poor soils in most of its area, inadequacy and irregularity of rainfall, occasional droughts and early frosts, very short growing season, and permanently frozen subsoils in the north. As a result of these handicaps, large areas of arable lands are left fallow, once in two or three years.

The Soviet Union has succeeded in bringing under the plough large areas in Central Asia, Caspian-Turan lowlands and the lower basins of the Volga and Dnieper by increasing irrigational facilities. Nearly 9·5 million hectares of land is now under irrigation. Several new irrigation works on the rivers Volga, Dnieper, Syr Darya and Amu Darya are under way.

The methods of dry farming, such as strip planting and contour ploughing, which conserve moisture and lessen wind erosion are widely practised in the areas east of the Volga and northern Kazakhistan

Afforestation has been undertaken in a big way. It is hoped that this would help in checking soil erosion by water and wind. Furthermore, it would retain more snow and water for winter crops.

Large swamps in cold and humid lands of European Russia have been drained. Efforts are being made to extend the northern limit of agriculture by pushing it to the Arctic Circle, especially in Europe and west Siberia Cold-resistant and quick-maturing varieties of cereals are being developed for the purpose. Vegetables are now grown near the Arctic cities in the north.

The Soviet agriculture is organized into (*i*) collective farms called *kolkhozes* and (*ii*) state farms known as *sovkhozes*.

In a kolkhoz, peasants form agricultural co-operatives or collective farms by pooling their resources—land, cattle, implements and seeds. Each farmer retains a small individual holding —a cottage, a kitchen garden and paddock for his own livestock. He receives a share of the harvest, proportionate to his work on the kolkhoz, after the State has taken its share of production. A kolkhoz has now an average area of about 1,100 hectares. The activities on the farm are all mechanized.

There are about 8,000 machine and tractor stations owned and operated by the government. The machines belonging to these stations are available to collective farms on rent. The machine and tractor stations also work as repair stations for the machines owned by the collective farms. The collective farms are now encouraged to own their machinery.

The sovkhozes, the state farms, are owned and run by the government. To begin with they were very big: something like 30,000 to 60,000 hectares each. Now they have an average area of about 1,200 hectares. The managers of these farms are appointed by the State and all the labour is hired. These farms specialize in certain products and are scattered over the Union, in all the climatic regions Their main purpose is to conduct experiments. These farms have their own equipments—tractors, trucks, combines, threshing machines and the like

The per capita arable land in the Soviet Union is about a hectare Although the Soviet agriculture has made impressive progress since 1917, it is not as spectacular as that of the Soviet industry. Lack of trained personnel and individual incentives are among the various factors responsible for relatively slow progress in this field. Efforts are now being made to provide more incentives for farmers in various ways to raise agricultural production and improve stock breeding according to planned targets.

Nearly three-fourths of the arable land is under cereals and about one-eighth under industrial crops—flax, sugar-beet, cotton and sunflower seed.

Wheat, in 1963, was grown over an area of more than 67 million hectares. Both winter and spring varieties are grown, mostly on *chernozem* soils. The Ukraine specializes in winter wheat, whereas spring wheat is grown east of the Don and farther north because of long and unfavourable winters. The yields of winter wheat are larger than those of spring wheat. The new, hardier varieties of wheat are grown as far north as Moscow and Leningrad.

Rye the next important cereal and staple food crop of the people is grown north of the wheat belt on poorer soils and in more severe climates. Being a drought-resistant cereal, barley is also grown in southern Ukraine, near the Volga and in Kazakhistan. Oats are grown in the north as they can resist severe cold better than rye. Potatoes are grown in the humid western and central parts of European Russia. Maize is now becoming increasingly important in Bessarabia, the south-western Ukraine and Georgia.

Flax is important in the Baltic region, and around Moscow and Leningrad. It is used as a fibre; and its seeds are used for edible oil. Cotton, a very important fibre crop, is grown in the Caspian-Turan lowland along the Syr

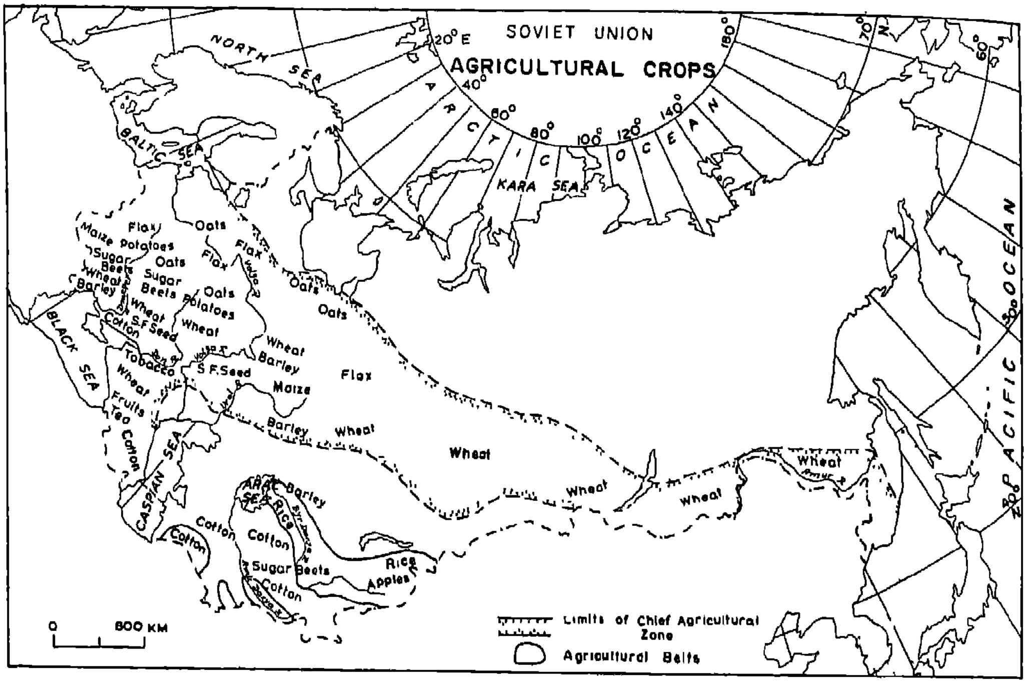


Fig. 94. The Soviet Union—Distribution of Agricultural Crops

Note the main farming regions of the Soviet Union. How do the Caucasus region and the Soviet Central Asia help the Soviet Union to become self-sufficient in its requirements of food and fibres ?

Darya and Amu Darya rivers, Ferghana Valley in Central Asia, the lower Volga Valley, and in the Crimea and southern Ukraine. Sunflower seeds are grown in the Ukraine and east of the Volga. Sugar-beets are chiefly grown in the Ukraine. Besides these, the rubber-producing plants and rice are also grown in Central Asian and the Trans-caucasian mountain valleys.

Animal Husbandry

After the October Revolution, animal husbandry received a great setback. It was only in 1955 that the country reached the pre-revolution levels of production. Since then animal husbandry has made a great headway and the country now leads the world in the production of milk and butter. It stands second only to the United States in the total production of meat. Australia is the only country which produces more wool than does the Soviet Union.

Dairy farming is concentrated in the central and northern parts of European Russia, particularly around Moscow. In West Siberia dairying is practised on alluvial meadows. Milk production receives emphasis in the vicinity of the large urban and industrial centres. Vologda District and West Siberia are notable for the manufacture of butter. The Caucasus and the Altai Mountainous regions are well-known for their cheese.

Beef cattle are reared on natural pastures in Kazakhistan, western Siberia and Trans-Baikalia. In the Caucasus and the Ukraine, beef cattle are reared on grain and root crops, especially maize and sugar-beet.

Hogs are raised in the western parts of the

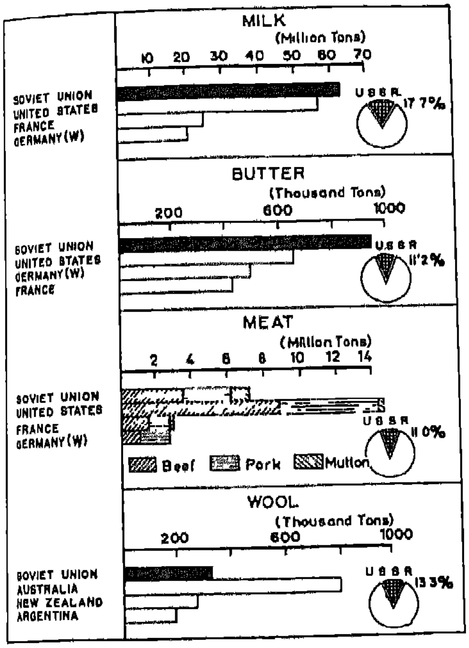


Fig. 95. Production of Dairy Products, Meat and Wool of the Soviet Union and other Leading Countries

Note the leading position of the Soviet Union in milk and butter. Find out how does the yield of milk per cow in the Soviet Union compare with that of the United States ?

country and in the middle reaches of European Russia. Potatoes serve as the major source of fodder for them. In the Ukraine they are reared on grain and waste products, and in the Caucasus on maize.

Rearing of sheep both for wool and meat is concentrated in dry parts of Central Asia—Kirghizstan, Tadzhikistan, Turkmenia, Kazakhistan and in Trans-Baikalia in the east. Meat-packing plants are located in Moscow and Leningrad and also at the focal points of transport in the stock breeding regions.

In the Far North, lichen serves as a natural fodder for the reindeer. In this part reindeer breeding is the mainstay of the economy. It provides milk, meat and fur for the nomadic tribes. It is also a principal means of transport. Efforts are being made to organize reindeer farms on scientific lines

Fishing

For a long time the fishing activity in the Soviet Union was confined to lakes and inland seas. But now its major fisheries are located in the oceans and open sea areas. The Pacific fisheries account for a quarter of its total catch Herring, salmon and crabs are the principal catch. Vladivostok and Petropavlovsk (Kamchatka) are the main fishing ports Caspian Sea comes next in importance providing a fifth of its total catch. Astrakhan is the leading fishing centre of the region. The Barent Sea and the White Sea in the north-west form an equally important fishing area, primarily for cod and herring. Murmansk on the Barent Sea and Kaliningrad on the Baltic are the chief fishing harbours. With a catch of 4·5 million tonnes in 1964 the country ranked next only to Peru and Japan.

Forestry

With nearly two-fifths of the land area under forests, the Soviet Union is the largest storehouse of both timber and lumber. Its enormous reserves of usable wood make it possible for this country to account for nearly a third of the total wood cut from the coniferous forests in the world. Economically, the important species of coniferous trees are larch, pine, spruce, cedar and fir. Notable among the deciduous trees are birch, oak, beech and maple. Hardwoods are rather scarce in the Soviet Union The total amount of roundwood cut in the country is over 360 million cubic metres. Besides timber, its forests in the taiga region provide ample scope for trapping fur-bearing animals. Many of these animals yield furs highly prized in international market. The production of newsprint in the Soviet Union is 630,000 tonnes and other paper 2·67 million tonnes a year.

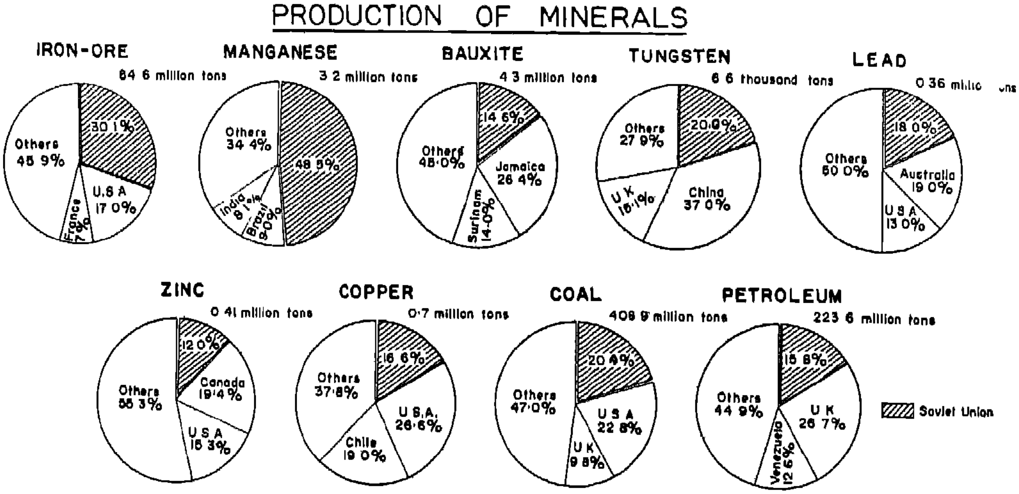


Fig. 96. Production of Minerals in the Soviet Union

The Soviet Union stands first in the production of iron-ore, and manganese. It ranks second in the output of gold, bauxite, tungsten, lead, coal and petroleum To what extent is the Soviet Union self-sufficient in mineral resources ?

Mineral and Power Resources

Varied and abundant are the mineral resources of the Soviet Union. It is rich in both mineral ores and fuels.

Endowed with perhaps the largest iron-ore reserves, it leads the world in annual production. In 1964, it mined about 84 million tonnes of iron-ore as against only 47 million tonnes extracted in the United States. It thus accounts for nearly 30 per cent of the ore annually extracted all over the world. The chief areas of iron mining are Krivoi Rog in the Ukraine, Kerch Peninsula near the Sea of Azov, the Magnitogorsk and Nizhni Tagil in the Urals and south Kuznetsk. Very extensive but low-grade deposits are found near Kursk, in the Moscow region. Newly discovered iron deposits in Central and eastern Siberia are also being exploited.

With over 3 million tonnes of manganese-ore produced every year the Soviet Union accounts for nearly half the world's total output. It is mined in the Ukraine, Georgia, Urals and Central Siberia.

The Soviet Union has been also the second largest producer of bauxite, standing next only to Jamaica. It produces more than 4 million tonnes per annum, which is nearly a seventh of the world's total production. The chief mining areas are near Leningrad, in the Urals, and on the Kola Peninsula.

In the production of tungsten, the Soviet Union is next only to China. It also produces antimony, lead, zinc, nickel and copper The Soviet Union is credited with very rich reserves of gold and platinum Although it stands next only to South Africa in gold production, its resources are claimed to be the largest in the world. Gold mostly comes from the Urals and the Lena Basin

Platinum is mined in the Urals, Nizhni Tagil being the main production centre. It accounts for nearly a third of the world's supply.

Apatite, from which phosphate fertilizers are manufactured, is mined in the Kola Peninsula, the Ukraine and Kazakhistan. Its reserves are estimated to be the largest in the world. Potash deposits are found west of the Urals.

The greatest power resource of the Soviet

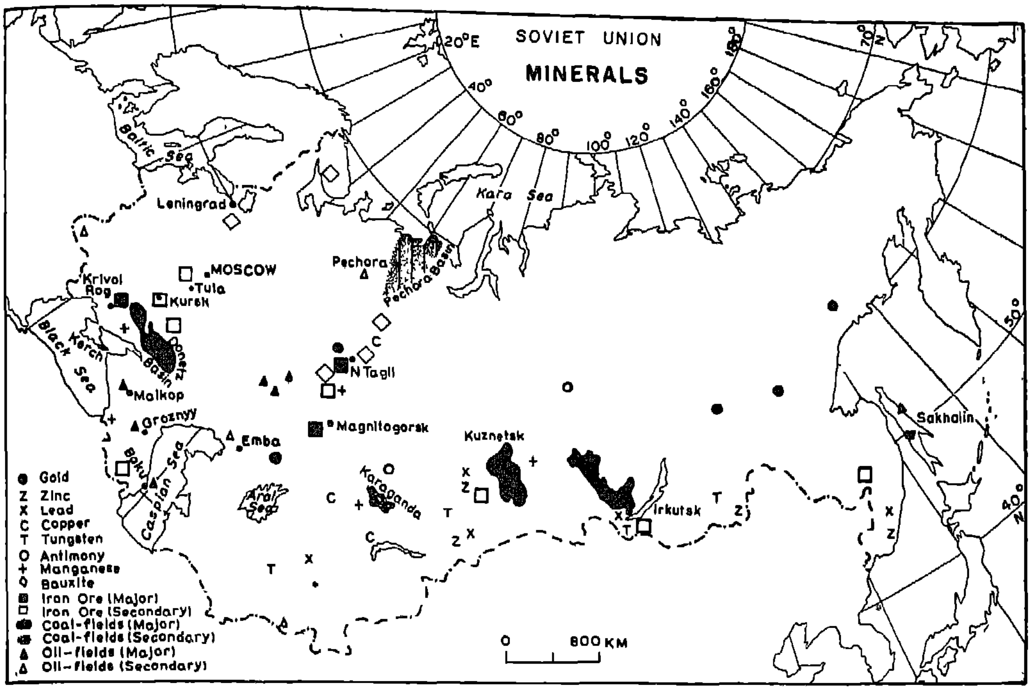


Fig. 97. The Soviet Union—Distribution of Minerals and Manufacturing Centres

Note the location of the chief manufacturing areas and the reserves of coal, iron and oil. What makes Moscow and the Urals the important centres of heavy industry ?

Union is coal. In 1964, it produced 408 million tonnes of coal and 145 million tonnes of lignite, accounting for nearly a fifth of the world's production in each The Donetz Basin, the Kuznetsk in West Siberia and the Karaganda in the Kazakhistan are the leading coalfields of the Soviet Union. There are several other deposits, many of which are in Asian territory. The Soviet Union also possesses considerable deposits of peat.

The Soviet Union produced over 223 million tonnes of crude petroleum in 1964, nearly a sixth of the world's output. Baku, Grozny, Maikop and Kuban are the traditional oil-bearing regions of the Soviet Union Emba, Central Asia, Pechora, Khatanga and the Sakhalin are the other newly developed fields. But the most important oilfield of today is situated between the Urals and the Volga and is known as the "Second Baku" indicative of its significance The important centres are Perma, Ufa and Kuibyshev.

Natural gas is also exploited from oil and natural gas fields. Its production was nearly 108,000 million cubic metres in 1964. The main centre of production is at Saratov wherefrom it is carried to Moscow through pipelines, 800 kilometres in length.

The Soviet Union has considerable uranium deposits.

The Soviet Union has abundant water-power resources. It claims nearly one-ninth of the world's potential water-power; but a large part of its waterpower resources is located far away from the industrial centres. The country has built the world's largest dams and hydroelectric stations. Prominent among its water-power stations are Dnieper (650,000 kw), Kuibyshev (2·3 million kw), Volgograd (2·5 million kw), Bratsk on the Angara River (4 5 million kw) and Krasnoyarsk on the Yenisey (5 million kw). Still bigger schemes are under way. It has well over 100 million kw. of installed capacity only a fifth of which is based on hydel-power.

Industries

The major object of the Soviet Five Year Plans has been to encourage planned production. In the field of industry, in the first instance, a powerful heavy industry based on increasing mineral output was to be developed. The emphasis has been on machine building and quick and substantial increase in defence potential. The production of luxury and consumer goods has been generally postponed in favour of basic and more pressing needs of national security and the basic necessities of life. Now there is an emphasis on the production of consumer goods as well.

Before the Revolution, the textile industry was the most prosperous, whereas by 1939 it ranked very low as compared to new heavy industries. The chemical industry was developed almost entirely after the Revolution. Metallurgical industry which was formerly confined only to European Russia has now its centre of gravity shifted eastwards to Soviet Asia in keeping with the new discoveries of mineral deposits. Moreover, World War II accelerated this process for reasons of national security.

Iron and Steel Industry thrives in the Ukraine on the iron-ore from Krivoi Rog and Kerch and on the coal from the Donetz Basin. The industry is developed on both the coal and iron fields The region produces turbines, textile machinery, rolling mills, blast furnaces and sugar and oil refineries. Kramatorsk, Voroshilovsk, Krivoi Rog, Kerch, Dnepropetrovsk are among the leading iron and steel centres in this region.

In the Urals the important iron and steel centres are Magnitogorsk and Nizhni Tagil. They are located on the iron fields of the Urals, where coal is sent from Kuznetsk and Karaganda coal-fields. The towns of Chelyabinsk and Sverdlovsk are the producers of tractors, machines, tools, trucks, blast furnaces and munitions

Tula District near Moscow is important for machinery, tools and automobiles. Moscow and Gorky are the chief centres of production.

Leningrad specialises in the production of generators, machine tools and instruments.

In Soviet Asia the most important region is the Kuznetsk with a number of centres. Tashkent, Irkutsk and Taishet-Bratsk are new centres of the steel industry.

The ship-building industry is developed at Leningrad, Sevastopol and Vladivostok. River boats are built at Kiev, Gorky and Molotov.

In 1964, the total production of pig-iron and ferro-alloys was over 62 million tonnes, and the crude steel 85 million tonnes It thus ranks second only to the United States in the manufacture of iron and steel.

Chemical works are in the Ukraine, at Dnieper Dam, on the Kola Peninsula and in the Caucasus.

Cotton textiles are manufactured in and around Moscow, Leningrad, Tashkent and Ferghana. Linen mills are at Ivanovo, Kalinin and Moscow.

Beet sugar is produced at Kiev, Kursk, Ferghana and Vladivostok. It is the largest producer of sugar with an annual production of over 7 million tonnes. Fish canning is done at Murmansk, Vladivostok, Astrakhan and Rostov. There are a large number of food-processing industries scattered in different parts of the Union.

Transport

Great distances are both an asset as well as a problem for the Soviet Union. Today a large network of highways, railways, waterways, and airways serves the Soviet Union. Nevertheless, all these means of communication are inadequate to cope with the increasing demands of its fast growing economy.

A very small proportion of the Soviet highways consists of hard surfaced roads. Very few of its

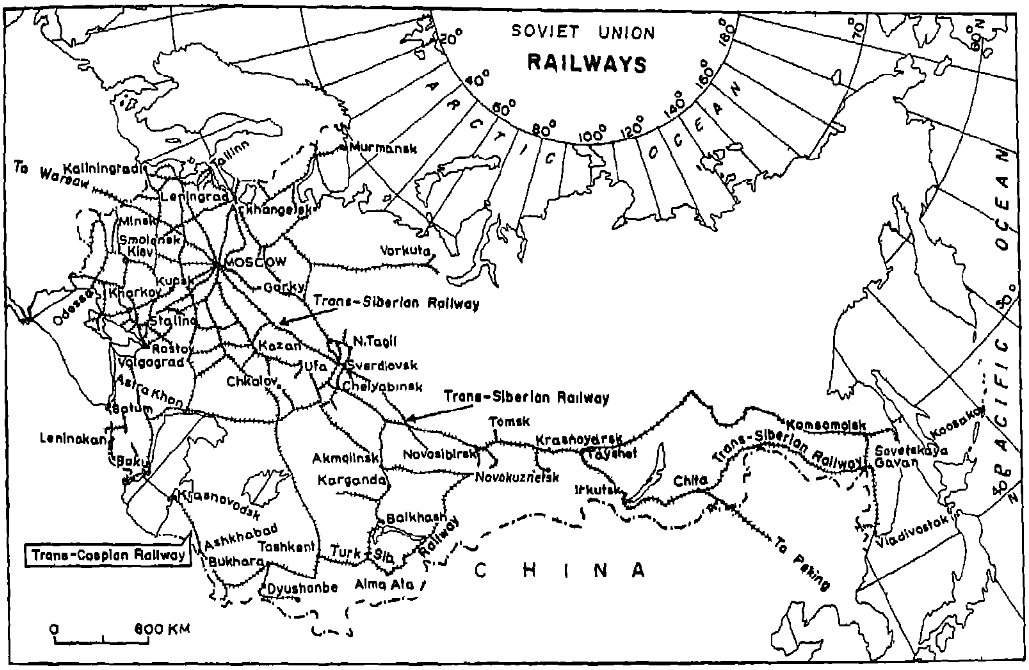


Fig. 98. The Soviet Union—Principal Railways

The Soviet railways are responsible for carrying nearly 90 per cent of the total freight. What makes the Soviet Union depend so much on the railways alone ?

roads are all-weather roads. One of the reasons of this state of affairs in the plains of Europe, Siberia and Central Asia is the lack of bed rock and suitable road metals.

In 1960, the total length of the railways was over 124,000 kilometres. Nearly 90% of the total freight is carried by the Soviet railways. Railways are the only means of communication usable throughout the year. The best served areas are the Donetz Basin, the Moscow industrial area, and the Ural mining and industrial region. The express trains on the Trans-Siberian Railways take nine-and-a-half-days to cross the country from the Polish frontier to Vladivostok. It takes three-and-a-half days to travel from Odessa on the Black Sea to Murmansk on the Arctic Ocean. Moscow and Leningrad are also connected with the new cotton fields of Central Asian Republics of Kazakhistan, Kirghizstan and Uzbekistan, by the Trans-Caspian Railway. The second Trans-Siberian Railway connecting Moscow with Kazakhistan and West Siberia has helped in the industrial development of the region.

The Soviet Union is endowed with one of the largest systems of navigable waterways of the world., But the usefulness of these waterways is reduced by two facts. Many of its rivers are frozen during the long winters; and a large number of rivers flow away from the main lines of trade and commerce. Volga is the most important navigable river, although it empties into the land-locked Caspian Sea. Oil, coal, fish and salt are carried upstream, whereas wood, grain and textiles are sent downstream.

Since the water-divides between the rivers of the European plains are very low and insignificant, the rivers have been easily interconnected

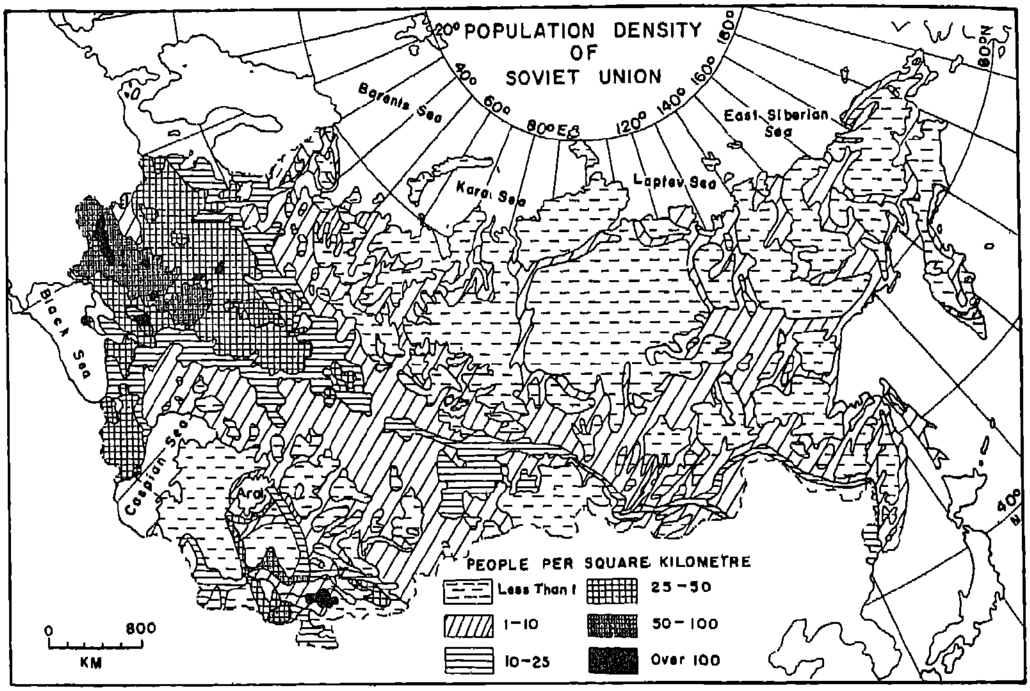


Fig. 99. The Soviet Union—Distribution of Population

Note the areas with relatively high density of population. How will you account for large open spaces very sparsely populated in the Soviet Union ?

with canals. Moscow has now become a "Port of Five Seas" as it is connected with the Caspian, the Black Sea, the Baltic, the Lake Ladoga, and the Arctic Ocean through the White Sea. The Siberian rivers are large and wide but they flow into the Arctic, passing through uneconomic regions. The Amur in the far east has great transport possibilities. In winter when the rivers are frozen they serve as natural tracks for sledges.

The Soviet Union now uses the northern sea route in the Arctic from Murmansk to Vladivostok. It is a much shorter route as compared to those passing via the Suez or the Panama Canals. But this route is ice-free only for two months in a year. Murmansk is the only ice-free port all through the year, as it is kept open by the warm Atlantic drift. The ports on the Black Sea and the Baltic as well as Vladivostok are kept open by icebreakers.

The country has a network of airways with Moscow and Leningrad as the hubs. The airways are particularly important in areas like northern and eastern Siberia where there are no railways or other means of communication. They carry passengers and goods, assist in agricultural operations, fight plant pests and parasites and assist in protecting forests against fire.

People and Their Distribution

The Soviet Union is a home of several nationalities and racial groups. The Slavic peoples, amongst whom the Russians, Ukrainians and Byelorussians or White Russians are more prominent, comprise three-fourths of the population.

The Soviet Union consists of fifteen autonomous republics. Each republic corresponds to one of the more important nationalities In the Soviet Union a large number of languages are spoken. The use of Russian as first official language helps to unite these diverse peoples into a single national entity.

In 1964, the total population of the Soviet Union was estimated to be 227 million people. With its exceptionally large area, the average density of population is only 10 persons per square kilometre But there are very large variations from region to region

The distribution of population is influenced by climate, vegetation and soils. Recently the discovery of mineral deposits and the consideration of national security along its Asian frontiers have further affected the pattern of population distribution.

The climate in the north is too cold; it is too dry in the south especially in parts of Central Asia, while it is better in the centre and south-west. This central belt, which looks on a map like a wedge starting from the western borders and tapering towards the Lake Baikal, is well endowed with assured rainfall and fertile soils. As a result, it is the most populous part of the Soviet Union. This belt further extends as a narrow ribbon along the southern border of eastern Siberia up to Vladivostok in the far east. Patches of dense population also exist in the plains and valleys bordering the mountain periphery where ample irrigational facilities are available.

Today there are three cities with a population over a million each; 25 cities have over half a million; and 150 cities with a hundred thousand and over. Its total urban population is over 100 millions. Thus rapid urbanization is a distinct trend in the Soviet Union.

EXERCISES

Review Questions

1 Answer the following questions briefly:
  (*i*) Name the three cereals in which the Soviet Union leads the world.
  (*ii*) Which are the two major industrial crops of the Soviet Union ?
  (*iii*) State the five metallic minerals in which the Soviet Union is an important producer.
  (*iv*) Which is the leading consumer industry of the Soviet Union ?
2. Distinguish between:
  (*i*) An agricultural society and an industrial society.
  (*ii*) A kolkhoz and a sovkhoz.
  (*iii*) An arable land and net cultivated area.
3. Complete the following statement with a correct ending:
  The rivers in the Soviet Union are not very useful for carrying goods because
  (*a*) they are few and too small for ships to ply on them.
  (*b*) they are very swift as they have to follow steep gradients.
  (*c*) they cannot be interconnected by canals owing to the rugged terrain.
  (*d*) they flow away from the natural lines of trade and commerce.
  (*e*) the Soviet Union possesses a dense network of railways carrying 90 per cent of the total freight.

4. State the salient features of the Soviet agriculture and mention the limitations from which it suffers.
5 Describe briefly the distribution of major crops of the Soviet Union pointing out the relationships between them and the soil and climatic conditions.
6. Give an account of the iron and steel industry of the Soviet Union. Also explain the location of major centres of this industry in respect of the raw materials.
7. Write in brief the relative importance of various means of transport in the Soviet Union. What makes the Trans-Siberian Railway very important for the Soviet Union ?

Finding Out

8. Find out how World War II affected the growth and distribution of heavy industries in the Soviet Union

Cartographic Work

9. Draw a suitable cartogram to represent the following land use data·

	Soviet Union	India
	(in million hectares)	
Total land area	2234	297*
Arable land	230	161
Permanent pastures	370	14
Forested land	880	55
Other	754	67

(*Land use data are available for this area only although the total land area is 326 million hectares.)

Work out the per capita implications of these figures and show them with the help of a pictogram if you so desire.

Picture Reading

10. Study carefully pictures No. 69 to 74 and write a brief note on the natural limitations placed on the Soviet agriculture and how these are being gradually overcome by the people.
Study carefully picutres No 76 to 79 and write a brief note on the new shift in the nature and distribution of the Soviet industy

Films Available

(*i*) Desert is Receding. No. 43; 20 mins; English/Hindi; I.D.E. USSR
(*ii*) Earth Treasure No. 81; 60 mins; English; I.D.E. USSR.

(*iii*) Let the Automate Do It. No 61; 20 mins; English; I.D E. USSR.

(*iv*) Automatic Machines Our Friends No 62; 20 mins; English/Hindi; I.D.E. USSR

(*v*) Atomic Ice-breaker No 98; 20 mins; English; I D E. USSR

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CHAPTER 14

Regions of the Soviet Union

THE Soviet Union may conveniently be divided into a few broad geographical regions: (*i*) the Eastern European Plains, (*ii*) the Caspian-Turan Lowland, (*iii*) the West-Siberian Plain, (*iv*) the Central Siberian Upland and (*v*) the East-Siberian Highlands.

The Eastern European Plains

This region covers about two-fifths of Europe. Nearly three-fourths of the total population of the Soviet Union inhabits this area. It is, therefore, by far the most important part of the Soviet Union.

This broad region in turn comprises the subdivisions such as (*i*) the northern European region, (*ii*) the western borderlands, (*iii*) the central industrial region, (*iv*) the southern agricultural belt, and (*v*) the Caucasus region.

The Northern European Region is situated along the Arctic Ocean. The northern wastelands of the tundra give way to the forestlands of the Taiga in the south. The region is interspersed with low hills and is dotted with lakes and swamps. Its climate is milder as compared to the northern Siberia in the east. The warm waters of the North Atlantic Drift render the port of Murmansk ice-free all through the year. This is the only all-weather port of the Soviet Union; and is now interconnected with the Baltic, the White Sea and the River Volga through canals. Besides being used for naval and military purposes, these canals also serve for shipping timber, minerals and canned fish to the south.

Oats, potatoes and vegetables are cultivated even north of the Arctic Circle. The region endowed with forest resources has saw-mills, and industrial plants manufacturing pulp, paper and cellulose. Fur trading and lumbering are the traditional occupations of the people.

Kola Peninsula is rich in rare earths and other minerals. Fertilizers, hard steels, machines and tools, electronics and chemicals are the industrial products of the region. Pechora Basin in the north-east has deposits of coal, oil and natural gas, which are being exploited since World War II.

The Western Borderlands consist of Leningrad and Baltic Districts, Byelorussia and the western Ukraine. It is a transitional zone lying between the plains of central and eastern Europe.

Towards the north, the coastal plains, the old lake basins, river valleys, lakes and swamps alternate with low hills or morainic ridges. The region thus presents a typical landscape of an

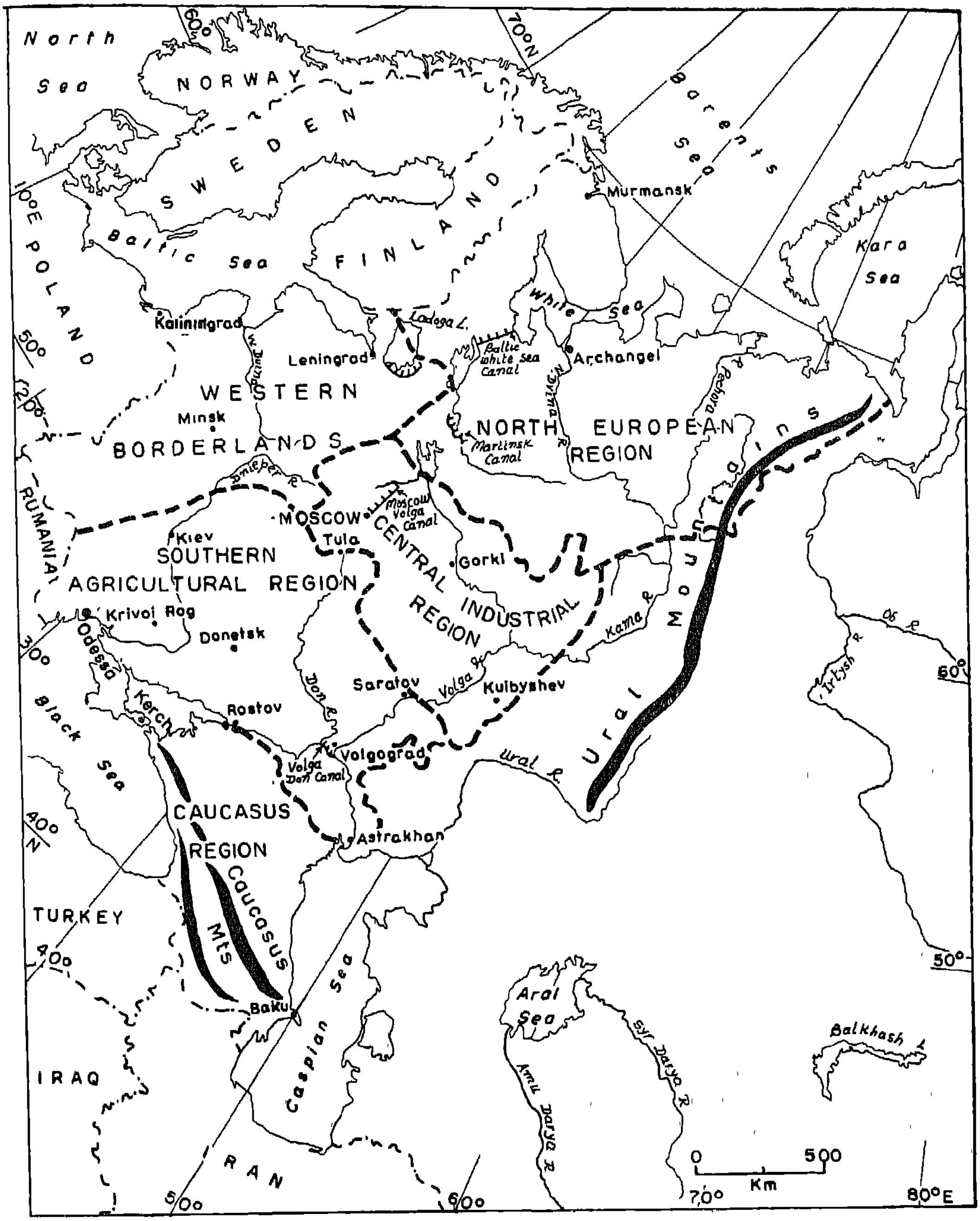


Fig. 100. Eastern European Plain

Note the subdivisions of this largest plain in Europe. Which subdivision must be very important agriculturally ?

area that underwent glaciation in the past. In the south, that is in the western Ukraine, it is an open rolling low plateau covered with loess deposits.

Climate is moderate owing to the influence of the Baltic Sea and the Atlantic Ocean. The summers are cooler, whereas the winters are cloudier and warmer as compared to the interior lands.

In the north, much of the land is forested and the soils are of limited fertility. It is an area of subsistence farming, where rye, potatoes, forage crops and flax are raised. Forests offer considerable employment opportunities in lumbering and wood industries.

Leningrad has been an important nerve-centre of the Soviet Union. It was the capital city of the Russian Empire and was known as St. Petersburg. Today it is the leading port, one of the big industrial districts and a busy railroad centre. This second largest city of the Union, besides being known as an intellectual centre, has a variety of industries—cotton and woollen textiles, machines and tools, ship-building, paper, cellulose, and electrical equipment.

Byelorussia has the distinction of being the gateway to the heart of Russia. This marshy lowland has been the battlefield, or an outer defence of Moscow and Russia proper.

The low loess-covered plateau of the western Ukraine, formerly a region of mixed forests, is now an area of good farmlands of the Soviet Union. It merges with the steppe region of the central and eastern Ukraine in the east. Rye, wheat, buck-wheat and oats are the principal products. Cattle, horses and sheep are reared on the slopes of the Carpathian Mountains. Oil is also found in the foothills of these mountains. Lvov is the principal city and a transport centre of the region.

The Central Industrial Region consists of the Moscow District and the upper and middle Volga Valley. It is a region of rolling hills and low valleys. It is the heart of the Soviet Union, with Moscow as its chief centre of industries, transport and federal administration. It is a transition zone from the taiga in the north to the rich agricultural belt in the south.

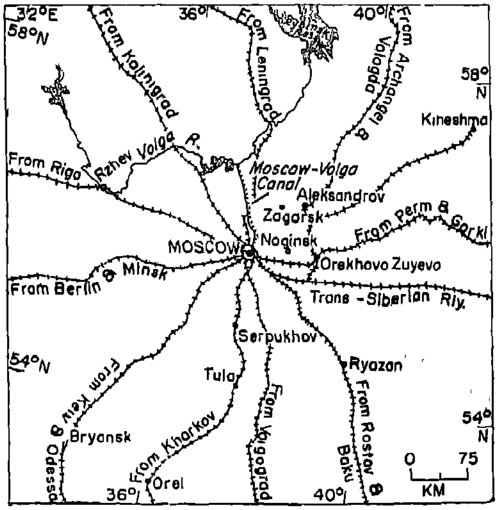
Climate is of continental type with very cold winters and fairly warm summer. The original mixed forests have been cleared and crops are raised and milch cattle are reared to meet the demands of the growing population. Rye, oats, potatos and vegetables are the main food crops, whereas flax is the leading industrial crop used for its fibre. In the fertile soils of the south are grown wheat, hemp and sugarbeet.

It is the most important industrial region not because of easy availability of raw materials or power, but because of early momentum owing to the availability of skilled artisans and a big market. Its industries are diversified and mostly responsible for the production of market-oriented consumer goods. Rolling stock, automobiles, machines and tools, armaments, aircrafts, synthetic rubber, chemicals and textiles are some of the prominent industries of this region.

Moscow, the hub of the Soviet Union, is

Fig. 101. Moscow, the Hub of the Soviet Union

Study carefully the nodal position of the city of Moscow in the Eastern European Plains. Note that as many as eleven railway trunk routes converge on this city. Find out why it is called the Port of Five Seas ?



situated on the banks of the shallow winding river Moskva, meaning muddy waters. Kremlin, the heart of the city, is a fortified palace on a hill, to the north of the river and is now the principal seat of the Federal Government. It was originally built by the Russian Princes. The city has now large office buildings, commercial districts and residential sections served by buses and efficient subways—an underground railway system. It is also the leading intellectual centre of the Soviet Union. The population of the city was 6 3 million people in 1964. The importance of the city lies in its being the most important transport centre. Eleven trunk rail-routes and a few canals connecting the five seas converge on this city.

Gorky and Kuibyshev are the other two important industrial towns of the region They are situated towards the east in the Volga Valley. The Central Industrial region of Moscow is now served by the Tula coal-fields, the peat deposits of Gorky, the hydroelectric power of the Volga, and the oil deposits of Kuibyshev.

The Southern Agricultural Belt consists of Bessarabia, the Ukraine and the lower Volga Valley. This is the largest and the most densely populated region of the Soviet Euorpe. It is covered with deep fertile dark soil It forms the best farmlands and a surplus food zone of the Soviet Union. It produces wheat, corn and dairy products. The region is also highly mineralized with large deposits of iron, coal, manganese and other minerals.

The Dnieper, Don and Volga are the three most useful rivers of the Soviet Union. They irrigate farms and produce water-power for industries.

Bessarabia in the west is a land of orchards and vineyards.

The Ukraine produces wheat, barley, sugar-beet, sunflower-seeds and linseed. Ukraine along with the lower Volga region is often called the breadbasket of the Soviet Union. Nearly three-fourths of the Soviet sugar is refined in the Ukraine. Dairy cattle, pigs and poultry are reared on beet-waste.

The eastern Ukraine is a highly industrialized region Large deposits of coking coal and high grade iron have led to the development of a metallurgical industry. It is still the most important region for heavy industries, particularly iron and steel. Donetz Basin, Azov District and Kharkov are the three important industrial areas in this region, having an excellent combination of iron and other metallic minerals, coking coal, hydel-power and Caucasian oil.

The Lower Volga rivals the Ukraine in the production of wheat. Large tracts are irrigated. They grow cotton, Bombay hemp and rubber producing plants Volgograd is the most important city of this region. The Volga delta is a fishing district of the Soviet Union Caspian oil, agricultural produce and fish are shipped north through the Volga

Kiev is the capital city of the Ukraine and Odessa its important sea-port having a good deal of international trade

The Crimea is known for orchards and vineyards. It is the Riviera of the Soviet Union because of its warm, sunny and pleasant climate

The Caucasus Region lies to the south-east of the Eastern European Plain It is a region of extremes both in respect of relief and rainfall. The Caucasus Mountain range in the south is high, rugged and contains several glaciers. In the north are the low plains lying partly below sea level. The western Caucasus facing the Black Sea receives 250 centimetres of rainfall annually, the highest for the whole of the Soviet Union, whereas much of the area in the east is akin to the desert region of Central Asia

Kuban Valley lying north of the Caucasus is an important agricultural region where wheat, corn, barley and sugar-beet are grown. Further north, near the Sea of Azov are raised cash crops such as cotton, jute, rice and tobacco, typical of a subtropical region.

South of the Caucasus, are grown rice, cotton, olives, vineyards, citrus fruits and tea Tea gardens of Georgia produce enough tea for nearly the whole of the Soviet Union

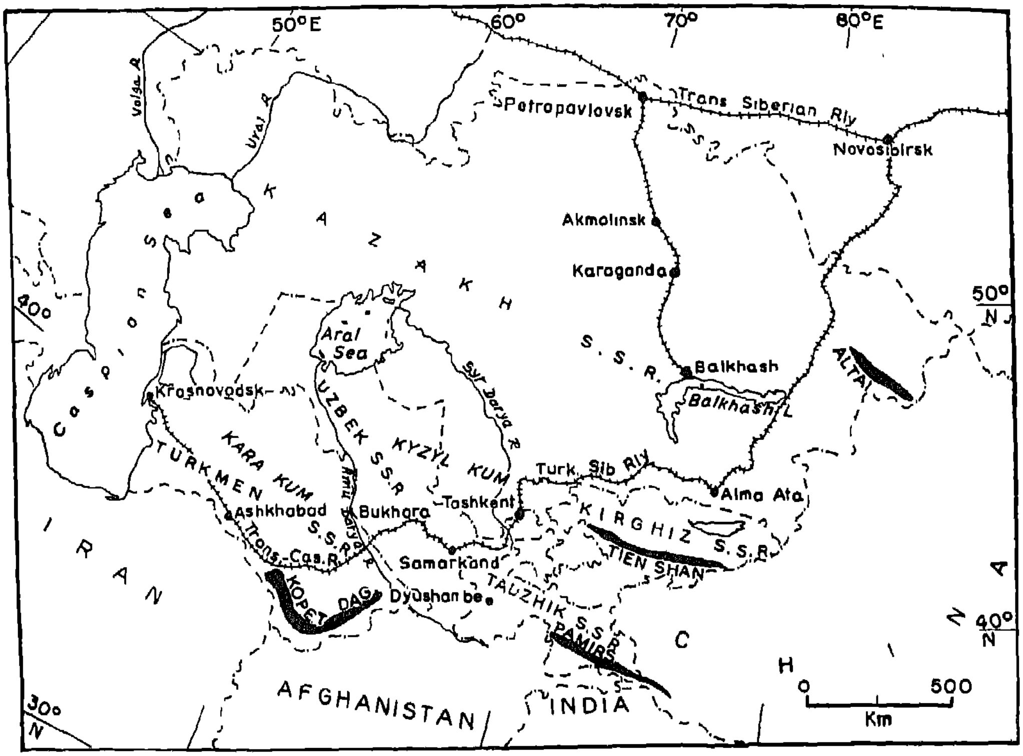


Fig. 102. The Caspian-Turan Lowland

Note that the Caspian-Turan Lowland is a region of inland drainage. This lowlying desert is flanked in the south by high mountains covered with snow. In what way are the rivers Amu Darya and Syr Darya important for this region ? What crops would you expect here ?

The Caucasus region has important oil deposits at Baku, Maikop and Grozny. Copper and manganese are also mined in this region.

The Caspian-Turan Lowland

The region is characterized by the inland drainage and desert climate. This region, also known as the Soviet Central Asia, consists of three natural sub-divisions. In the north lies the true steppe and the desert steppe. Further south extend the deserts occupied by plateaus and depressions. To the far south stand majestically the mountains of Central Asia.

Sheep rearing and irrigation agriculture are the two very important activities which have made this region well-known for several centuries. The Amu Darya and the Syr Darya valleys form the focal point of the life in this region. The Kazakhs, the Uzbeks, the Tadziks and the Turkmen are the important nationalities, each forming an autonomous republic of its own.

The Soviet Central Asia is a region where Europe and Asia co-exist side by side. It has a touch both of ancient Central Asia and modern European Russia.

The zone of steppes and semi-desert area is a region of heavily eroded hills and low plateaus. The soils in the north are fertile black earths, in the south they are brown and less fertile. It was a land once dominated by nomadic herdsmen—the Kazakhs. They are known for their fighting qualities.

The desert zone occupies the major part of the Soviet Central Asia. Large parts are covered either by sand or by stone. Between the Syr Darya and Amu Darya lies the Kyzyl Kum or red sand desert. To the south of the Amu Darya lies the Kara Kum or the black sand desert. The traces of old irrigation systems are still found in these deserts, known for their extreme aridity The new irrigation schemes have brought large areas under cultivation, especially cotton, melons, fruits and mulberries Animal husbandry is still important, even though it has lost much of its earlier mobility.

The region is rich in mineral deposits The Karaganda coal-fields are among the three important coal-fields of the Soviet Union. They provide a base for a new iron and steel industry. Salt deposits on the Caspian shore sustain a flourishing chemical industry.

The mountain belt of the south is by far the most populous and important. This mountain wall separates the Soviet Union from the adjacent areas of Iran, Afghanistan and China The Kopet Dagh, Pamirs and Tien Shan are the high mountains and uplands of this region.

Agriculture, mining, industry as well as population are largely confined to the foothills of the south and south-east. Irrigation and mining have transformed the low-lying deserts into gardens, croplands and busy mining and industrial townships. The new irrigation schemes, among which the new Ferghana Canal is most important, have changed the face of the land

Cereals, fibres and fruits are the important agricultural products. Wheat, rice and millet are the major cereals grown in this region. Fruits—melons, pears and apples—are equally important. Alma Ata, the capital of Kazakhistan, literally means "Father of Apples".

Long staple Egyptian cotton grown in Ferghana Valley and in the irrigated lands and oases has made the Soviet Union self-sufficient in its cotton requirements. Silk is yet another traditional product of this region Equally important is wool, as sheep are still the most numerous of the animal stock bred in this part. Sheep supply the natural fine black fur for the famous "karakul" coats The old cities of Bukhara and Samarkand are still renowned for the "oriental" rugs.

The traditional industries, are, however, overshadowed by mining of coal, copper, tin, manganese and uranium. Tashkent, the largest urban centre of the Soviet Central Asia, is an important mining centre for copper. It now boasts of a modern cotton textile industry and new steel mills It is the capital city of Uzbekistan. Trans-Caspian, Trans-Aral and Turk-Sib railways connect this region with the Caspian Sea, Moscow city and Siberia The ancient international silk-route connecting China with Europe also traverses this region, through the Dzungarian Gate

West Siberian Plain

This region consists of the northern wastes of the tundra, the trackless wilderness of the forested taiga and the belt of deciduous trees in the south. On the west, it is bounded by the Urals which separate it from the great East European Plain.

The Urals form the most highly mineralized region of the Soviet Union It is the second largest centre of heavy industry. Its mineral wealth is both abundant and varied. The mountains being highly eroded, its mineral reserves in many cases are either very close to the surface or are actually exposed Iron, nickel, chromium, manganese, copper, aluminium, gold, platinum, precious stones, rock salt and mica comprise its varied mineral wealth. Oil is produced on the western slopes and also to the south. Coal is mined in small quantities in the region.

Iron of this region is transported to the Kuznetsk coal basin nearly 2,000 kilometres away in southern Siberia, and coking coal of the Kuznetsk is brought in as return cargo. This

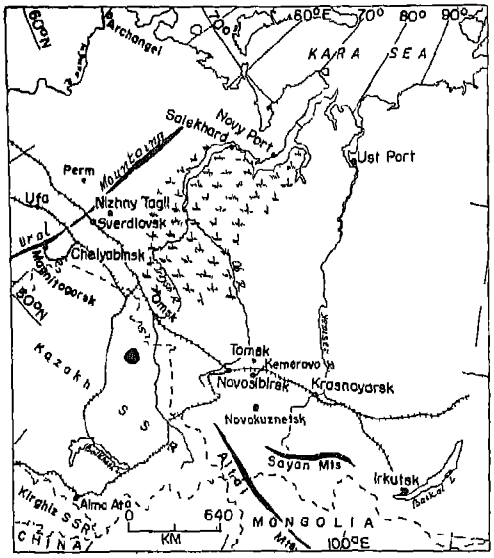


Fig. 103. West Siberia

Note the agricultural areas and mining and industrial centres What part does the Trans-Siberian railway play in opening up this region ?

long haulage of industrial raw materials was reduced to 1,300 kilometres when Karaganda coal-fields in Central Asia were developed.

Nizhni Tagil and Magnitogorsk are the principal centres of iron and steel industry. Rolling stock, aeroplanes, automobiles and fertilizers are produced in this region. The oilfield south-west of the Urals is called the "Second Baku" and is now the largest and the most productive in the Soviet Union

The Kuznetsk Basin is located in the upper reaches of Tom River in the Altai Mountains. The coal reserves of this region are the largest and the best in the Soviet Union. It supplies coal to the Urals, to the Soviet Central Asia and the Soviet Far East. Now that iron deposits are found in this region a metallurgical industry has been developed on its own resources. Novokuznetsk and Kemerovo are the two important centres of mining and industry. Novosibirsk is an important transport centre of southern Siberia.

The rest of the West Siberian plain consists of the taiga and the tundra in the north. The forests are still untouched and animal hunting, trapping fishing and reindeer-breeding are the traditional occupations of the people. A large number of research stations are now operating in this region. Much of the coal deposits still lie unexploited in this part.

The Central Siberian Upland

East of the Yenisey, the land rises abruptly to form the Central Siberian plateau To the east of this plateau lies the Valley of the Lena. In the south the upland merges with the Sayan Mountains Lake Baikal marks the south-eastern limit of the Central Siberian upland.

The Lena, the largest of the Siberian rivers, is navigable from the Arctic to Lake Baikal. The river along with its tributaries offers the only network of communication in the region. The rivers are open for navigation for less than four months. When frozen, they are used as sledge-tracks. Lena gold mines are known for their extensive reserves

Irkutsk situated north of Lake Baikal is the leading urban centre. Here meet the roads from the European Russia, China and the Soviet Far East. It is a centre of metallurgical industry, where minerals are smelted and machines and tools are made.

Lake Baikal is a deep lake formed by subsidence. Its bottom is nearly 1,300 metres below sea level and is claimed to be the deepest sweet water lake on the earth's surface. This large lake has a moderating influence on the climate of the surrounding area. The region is known for its animal husbandry.

The East Siberian Highlands

It is a mountainous region, which is still incompletely known. The region is famous for its volcanic activity and earthquakes. The coldest climate of the Northern Hemisphere is found in this part. The Verkhoyansk Valley, where the cold air of the surrounding hills collects, has the lowest known temperatures of this hemisphere It is precisely an example of what is known as 'inversion of temperature'. The region still remains to be a land of native hunters and trappers

The Amur Valley of the Soviet Far East is a lowland with the Manchurian type of climate Vegetation consists of broad-leaved trees Vladivostok is the main city, a port and a naval base on the Pacific seaboard. Within the last hundred years the Russian and Ukrainian settlers have given this city and other smaller towns a Russian touch. Farming, mining, fishing, lumbering, animal husbandry and metallurgical industry are the activities followed by the new settlers. It is the eastern terminus of the Trans-Siberian railway—the longest in the world.

Sakhalin Island in the Pacific is important for fishing and lumbering. Cod, salmon, herring, trout and crab are the important catch, whereas pulp is the most valuable forest product.

EXERCISES

Review Questions

1. Answer the following questions briefly:
   (*i*) Name the most important geographical division of the Soviet Union.
   (*ii*) Which is the rainiest part of the Soviet Union ?
   (*iii*) State the three important natural resources of East Siberia
   (*iv*) What makes Moscow the most important transport centre of the country ?

2. Give reasons:
   (*i*) The climate of the Northern European region is more mild as compared to North Siberian region in Asia
   (*ii*) The Ural region is highly mineralized.
   (*iii*) The Mediterranean type of climate is found in the southern Crimea.

3 Make out the correct pairs from the two columns:

(*i*) The only all-weather port of the Soviet Union	The Crimea
(*ii*) The former capital city of the Russian Empire	St Petersburg
(*iii*) The port of the five seas.	Vladivostok
(*iv*) The gateway to the heart of Russia.	Kremlin
(*v*) The principal seat of the Federal Govt	Verkhoyansk
(*vi*) The bread basket of the Soviet Union.	Second Baku
(*vii*) The cold pole of the Northern Hemisphere	Byelorussia
(*viii*) The most productive oil field of the Soviet Union.	The Ukraine
(*ix*) The terminus of the Trans-Siberian Railway.	Moscow
(*x*) The riviera of the Soviet Union.	Murmansk

4 Complete the statement by choosing the most appropriate ending:
The Moscow region is the highly industrialized region of the Soviet Union, because
   (*a*) it has a direct access to the seas through a network of canals.
   (*b*) of early momentum owing to availability of skilled labour and a big market.
   (*c*) of easy availbility of raw materials and abundant power.
   (*d*) in this region lies the federal capital surrounded by a rich agricultural land.

5. Divide the Eastern European Plains into geographical subdivisions and give a detailed account of its manufacturing regions and agricultural products.
6. Give an account of the Caspian-Turan Lowland and the West Siberian Plain pointing out their contribution to the Soviet national economy.

Finding Out

7. Collect information on how the life of the people in the Soviet Central Asia has undergone a rapid change in the recent past

Cartographic Work

8. In an outline map of the Soviet Union show the following:
   (*i*) The deepest sweet-water lake; (*ii*) The biggest salt lake; (*iii*) The most navigable river; (*iv*) The largest coal-field; (*v*) The leading centre of the iron and steel industry; (*vi*) The largest Asian river, (*vii*) The longest railway-line of the world; (*viii*) The major gold mining region; (*ix*) The most productive oilfield; and (*x*) The leading cotton producing region.
   First locate these things on the map and name them. Then put the above given description of each one of them in a bracket against its respective name.

Picture Reading

9. Study picture No. 70 carefully and see what information can you gather from it about terrain, plant and animal life, climate, natural resources and their possible use by man.

Films Available

(*i*) Kremlin Moscow. No 27; 20 mins; English; I.D.E. USSR.
(*ii*) Hungry Steppe. No. 58, 20 mins; English; I.D.E. USSR.
(*iii*) Moscow Region. No. 87; 70 mins; English; I.D.E. USSR.
(*iv*) A Land of Midnight Sun. No. 102; 40 mins; Hindi; I.D.E. USSR
(*v*) We Live in Minsk. No. 74; 50 mins; English; I.D.E. USSR.
(*vi*) Sverdlovsk. No. 36; 20 mins; English; I.D.E. USSR.
(*vii*) Our Sevastopol. No. 37; 20 mins; English; I.D.E. USSR.

(*viii*) Volgograd Today. No. 32; 20 mins; English/Hindi; I D E. USSR
(*ix*) My Tashkent. No. 25; 20 mins; English/Hindi, I.D.E. USSR
(*x*) Come to Uzbekistan No. 77; 50 mins; Hindi; I.D.E. USSR.

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APPENDICES

APPENDIX I

Area and Population of North American Countries (1965)

Country	*Capital city*	*Area (in sq. kms)*	*Population (in thousands)*
Canada	Ottawa	9,976,177	19,604
United States of America	Washington D.C.	9,363,353	194,572
Mexico	Mexico City	1,972,546	40,913
Guatemala	Guatemala City	108,889	4,438
Honduras	Tegucigalpa	112,088	2,284
British Honduras	Belize	22,965	106
El Salvador	San Salvador	21,393	2,929
Nicaragua	Managua	139,700	1,655
Costa Rica	San Jose	50,700	1,433
Panama	Panama City	75,650	1,246
Greenland	Godthaab	2,175,600	40
Bahamas	Nassau	11,405	134
Cuba	Havana	114,524	7,631
Haiti	Port-au-Prince	27,750	4,660
Dominican Republic	Santo Domingo	48,734	3,619
Puerto Rico	San Juan	8,897	2,633
Jamaica	Kingston	10,962	1,773
Trinidad and Tobago	Port of Spain	5,128	975

APPENDIX II

Area and Population of Countries in Europe (1965)

Country	*Capital city*	*Area (in sq. kms.)*	*Population (in thousands)*
Albania	Tirane	28,748	1,865
Austria	Vienna	83,849	7,255
Belgium	Brussels	30,513	9,464
Bulgaria	Sofia	110,669	8,207
Czechoslovakia	Prague	127,869	14,159
Denmark	Copenhagen	43,043	4,758
Finland	Helsinki	337,009	4,612
France	Paris	547,026	48,922
Germany (East)	Berlin	108,299	18,096
Germany (West)	Bonn	248,454	59,041
Greece	Athens	131,944	8,510*
Hungary	Budapest	93,030	10,148
Iceland	Reykjavik	103,000	189*
Ireland	Dublin	70,280	2,855
Italy	Rome	301,255	51,575
Luxembourg	Luxembourg	2,586	331
Malta	Valletta	316	319
Netherlands	Amsterdam	33,612	12,292
Norway	Oslo	324,219	3,723
Poland	Warsaw	312,520	31,420
Portugal	Lisbon	91,971	9,234
Rumania	Bucharest	237,500	19,027
Spain	Madrid	504,748	31,604
Sweden	Stockholm	449,793	7,734
Switzerland	Bern	41,288	5,945
United Kingdom	London	244,030	54,595
Yugoslavia	Belgrade	255,804	19,511

*The figures are for the year 1964.

APPENDIX III

Area and Population of States in the Soviet Union (1965)

State	*Capital city*	*Area (in thousand sq. kms)*	*Population (in thousands)*	*Density of Population (per sq. km.)*
Russian Soviet Federative Socialist Republic	Moscow	17,075	126,561	7
Ukrainian SSR	Kiev	601	45,516	76
Byelorussian SSR	Minsk	208	8,633	42
Uzbek SSR	Tashkent	450	10,581	23
Kazakh SSR	Alma-Ata	2,715	12,129	5
Georgian SSR	Tbilisi	70	4,548	65
Azerbaijan SSR	Baku	87	4,660	54
Lithuanian SSR	Vilnius	65	2,986	46
Moldavian SSR	Kishinev	34	3,368	100
Latvian SSR	Riga	64	2,263	36
Kirghiz SSR	Frunze	199	2,652	13
Tajik SSR	Dushanbe	143	2,579	18
Armenian SSR	Yerevan	30	2,194	74
Turkmen SSR	Ashkhabad	488	1,914	39
Estonian SSR	Tallinn	45	4,285	95

APPENDIX IV

Density of Population and Per Capita Arable Land in North America

Country	*Density of Population per sq. km. in 1965*	*Per Capita Arable Land in Hectares*
Canada	2	2·13
United States of America	21	0·95
Mexico	20	0·56
Guatemala	40	0·33
Honduras	20	0·36
British Honduras	5	0·3
El Salvador	137	0·22
Nicaragua	12	0·52
Costa Rica	28	0·43
Panama	16	0·45
Greenland	less than one	..
Bahamas	12	0·1
Cuba	67	0·25
Haiti	168	0·08
Dominican Republic	74	0·29
Puerto Rico	291	0·1
Jamaica	161	0·13
Trinidad and Tobago	190	0·17

APPENDIX V

Density of Population and Per Capita Arable Land in Europe

Country	*Density of Population per sq. km. in 1965*	*Per Capita Arable Land in Hectares*
Albania	65	0·27
Austria	87	0·24
Belgium	310	0·1
Bulgaria	74	0·55
Czechoslovakia	111	0·38
Denmark	111	0·56
Finland	14	0·59
France	88	0·42
Germany (East)	167	0·29
Germany (West)	238	0·14
Greece	65*	0·45
Hungary	109	0·55
Iceland	2*	0·005
Ireland	41	0·44
Italy	170	0·3
Luxembourg	128	0·2
Malta	1009	0·05
Netherlands	366	0·09
Norway	12	0·23
Poland	101	0·5
Portugal	100	0·47
Rumania	80	0·55
Spain	63	0·65
Sweden	17	0·41
Switzerland	144	0·07
United Kingdom	224	0·13
Yugoslavia	76	0·42

*The figures are for the year 1964.

APPENDIX VI

Some Per Capita Figures Indicating Standard of Living in a few Countries

Country	*Consumption of energy in kgs of coal equivalent*	*Consumption of Steel in kgs*	*Production of cement in kgs*	*Motor vehicles* in use per thousand persons*	*Telephones in use per thousand persons*	*Production of sulphuric acid in kgs*	*Physicians per ten thousand inhabitants*
Belgium	4,566	419	623	147	27	144	14
Canada	7,137	445	372	321	269	92	11
France	2,933	356	445	224	118	56	11
Germany (West)	4,230	579	577	154	140	57	18
Mexico	1,029	65	113	27	18	11	6
Netherlands	3,278	327	237	105	180	80	11
Norway	3,527	317	409	148	235	30	11
Poland	3,518	256	281	12	38	32	11
Soviet Union	3,430	355	285	**	**	34	20
Spain	996	109	260	30	50	54	12
Sweden	4,320	623	466	233	422	62	10
Switzerland	2,483	363	736	160	363	27	13
United Kingdom	5,079	438	313	188	182	59	12
United States of America	8,772	615	334	438	262	108	14
Yugoslavia	1,138	121	158	10	19	24	7

*Motor vehicles include passenger cars and commercial vehicles.

**Data not available.

APPENDIX VII

Further Readings and References

Listed at the end of each chapter are references for further reading. In each case the name of the author, title, series if any to which the book belongs, publisher, the place and year of publication, the pages relevant to the topic discussed in the text have been given. These may be used as collateral readings for further enrichment of the student's knowledge. The books with an asterisk mark are essentially meant for the use of teachers. The books listed below are meant for general reference.

Government of India. *School Atlas.* Survey of India, Map Publication Office, Dehra Dun, 1964
Minshull, R., *Regional Geography: Theory and Practice* Hutchinson University Library, London, 1967.
Monkhouse, E. J., *A Dictionary of Geography.* Edward Arnold Publishers Ltd , London, 1966
Moore, W. G., *A Dictionary of Geography* Adam and Charles Black, London, 1968
Parakh, B. S., *Learning Experiences in Geography.* National Council of Educational Research and Training, New Delhi, 1969.
Stamp, L. D., *A Glossary of Geographical Terms.* Longmans Green and Co. Ltd., London, 1966.
Swayne, J. C., *A Concise Glossary of Geographical Terms.* George Philip & Son Ltd., London, 1968.
UNESCO. *Source Book of Geography Teaching.* Longmans Green and Co. Ltd., London, 1968.

APPENDIX VIII

Films Available on Various Topics

A list of films available on various topics has been provided chapter-wise In each case the title of the film is followed by a procurement number, if any, the length of the film in terms of screening time, the language in which the commentary is made and the name of the agency which loans the film. The name of the agency is given in abbreviation. The full name and address of agencies and their branches are given below to help schools to procure the films mentioned It is further expected that a teacher would preview the film before it is shown to the class, prepare the class to understand its theme and finally, would follow up the film-show by a class discussion on the contents of the film.

1.	B.I.S.	British Information Services, Film Library. New Delhi—Chanakyapuri, New Delhi-11. Bombay—Mercantile Bank Building, Mahatma Gandhi Road, Fort, Bombay-1. Calcutta—1, Harington Street, Calcutta-16.
2.	C.H.C.	Canadian High Commission, Film Library, 13, Golf Links, New Delhi-3.
3.	D.T.A.	Department of Teaching Aids (NCERT), Central Film Library, Indraprastha Estate, Ring Road, New Delhi.
4.	F.E.C.C.	French Embassy in India, Cultural Centre, D-25, N.D S.E. Part II, New Delhi.
5.	E.F.R.G.	Embassy of the Federal Republic of Germany, 6/50, G Shanti Path, Chanakyapuri, New Delhi-11.
6.	R.D.E.	Royal Danish Embassy, 6, Golf Links Area, New Delhi-3.
7.	R.N.E.	Royal Norwegian Embassy, Koutilya Marg, Chanakyapuri, New Delhi-11
8	R S.E.	Royal Swedish Embassy, Nyaya Marg, Chanakyapuri, New Delhi-11.
9.	S.E.I.	Swiss Embassy in India, Nyaya Marg, Chanakyapuri, New Delhi-11.
10.	U.S.I.S.	United States Information Service, Film Libraries. New Delhi—U.S. Information Service, Bahawalpur House, Sikandra Road, New Delhi-1. Bombay—U.S. Information Service, Film Section, Fazalbhoy House, Marine Lines, Bombay-1. Calcutta—U S. Information Service, Film Section, Flat No. 3 Esplanade Mansions, Calcutta-1. Madras—U S. Information Service, 158, Mount Road, Madras-2.
11.	I.D.E. USSR	Information Department, Embassy of the USSR., 25, Barakhamba Road, New Delhi-1.
12.	Y E.I.	Yugoslav Embassy in India, Niti Marg, Chanakyapuri, New Delhi-11.

GLOSSARY

Agriculture : The science and art of cultivating the soil, raising crops, and rearing livestock. It is also called farming.

Arable land : Land which can be cultivated with a plough It is also called cultivable land and includes both cultivated and temporary fallow land.

Archipelago : A group of islands scattered in the sea

Atomic energy : Power obtained by splitting the atom under controlled conditions As the power is derived by bringing about a change in the nucleus of an atom, it is also known as nuclear energy.

Automation : The modern method of work in which computers, automatic controls and integrated machinery are used This new labour-saving equipment operates by combining separate steps into a fixed and continuous sequence of operation. In many cases it is self-starting and self-regulating.

Badlands : A highly dissected land surface comprising a maze of deep gullies with intervening sharp ridges and pinnacles. Rapid erosion due to rain and the steep slopes make it impossible for vegetation to take hold of the land

Blast furnace : A furnace in which a current of very hot and compressed air is used to force combustion in the melting of ores.

Cartogram : The representation of statistical data on a map in a [illegible] distorting the original shape etc. of the area concerned. Usually it is simplified map highlighting a single idea in a diagrammatic way.

Cartography : The science of preparing all types of maps and charts and includes every operation from original surveys to the final printing of maps.

Cavern : A large limestone cave formed by solution due to underground water or streams.

Chemical fertilizers : Substances of natural or artificial origin containing chemical elements such as phosphorus, potassium and nitrogen that are necessary to plant life. They are added to the soil for increasing its productivity

Chernozems : Dark well-drained grassland soils containing humus in upper layers and calcium deep below. They are most typical of the steppe region in the Soviet Union.

Coke : Solid and strong black substance with a high carbon content, left after volatile parts have been distilled from coal.

Coniferous forest : A forest consisting of a group of evergreen trees bearing cones and needle-shaped leaves. They are typical of the taiga region.

Conservation : Systematic preservation of natural resources especially soil, vegetation and wildlife, from destruction or wasteful use, for the benefit of coming generations.

Continental shelf : A bed of shallow sea bordering the continental platform. The angle of its slope towards the sea is usually less than one degree.

Contour ploughing : Tilling or ploughing hillsides or sloping land along the contour lines, that is around rather than up and down a slope mainly with a view to conserving soil and water.

Conurbation : A large urbanized area occupied by a continuous series of dwellings, factories, and other buildings, harbour and docks, railway yards, parks and playgrounds which are generally not separated from each other by rural land.

Cosmopolitan city : A city where people from different parts of the world live side by side and are largely free from national limitation or attachments.

Crater : A funnel-shaped hollow generally at the top of a volcanic cone through which volcanic materials are or used to be ejected.

Cross-section : A side view of the ground cut vertically along a straight line It is also known as a section or a profile.

Dairy farming : A kind of agriculture in which major emphasis is on breeding and rearing milch cattle Agricultural crops are raised mainly to feed these cattle

Deciduous forest : A forest consisting of trees which lose their leaves at some season of the year e g., monsoon trees shed their leaves in summer and in temperate lands the trees do so in autumn

Delta : A more or less triangular and level tract of alluvium formed at the mouth of a river entering a relatively quiet body of water. It is traversed by numerous distributaries

Density of population : The average number of inhabitants living within a unit area such as a square kilometre or a square mile presuming that people living in a given big area or a country are evenly distributed.

Diversified agriculture : A type of farming which involves the raising of many different kinds of crops and livestock.

Drainage : A system of rivers or streams which carries away or drains all the rain-water that falls in a region.

Dry farming : A method of farming adopted in certain regions of inadequate rainfall and devoid of irrigation facilities by conserving moisture in the soil and by raising drought-enduring crops.

Earthquake : Vibrations or shakings caused in the earth's crust by sudden tectonic movements or volcanic eruptions.

Erosion : A process which gradually wears down the higher places and carries away the eroded materials from the place of its origin to its next resting place.

Estuary : The wide funnel-shaped tidal mouth of a river formed generally as a result of the sinking of the lower part of the valley

Extensive agriculture : Farming in which the amount of capital and labour applied to a given area is relatively small

Fallow land : Arable land lying uncultivated for one season or more.

Fiord : A deep, narrow, steep-walled inlet of the sea as a result of the submergence of a part of a glaciated valley

Fisheries : The act of catching animal life from water, viz, trapping salmon, harpooning whales, diving for sponges and pearls, digging clams out of mud, and shooting seals. Also refers to places where fish exist in great numbers and are caught on a large scale.

Fishfarm : Hatcheries of fish where more productive and useful varieties of fish are seasonally stocked, carefully fed, and caught in a controlled manner.

Flax : The linseed plant whose fibre is spun and woven into linen, and seeds are crushed to obtain oil for making varnishes and paints

Fold mountains : Mountains with parallel ranges formed as a result of horizontal compressional forces

Freeways : The wide highways on which cross-roads are avoided by providing overhead links where one turns in only one direction to ensure smooth and speedy traffic.

Geology : The science of the composition, structure and history or the evolution of the earth

Geyser : A fountain of hot water and steam which is ejected automatically at intervals from a narrow fissure or vent connecting the deep source of water in the earth's crust to the surface.

Glaciation [illegible] cier or [illegible]

Glacier : A river of mass of snow and ice that moves slowly away from its place of accumulation carving a broad and steepsided valley on its way.

Growing season : Part of a year in a given region when the growth of vegetation or crops is made possible by a favourable combination of temperature, precipitation, and freedom from harmful frost.

Hanging valley : A tributary valley of a U-shaped glacial trough, left hanging as a result of rapid deepening of the principal valley by a deep glacier.

Heavy industry : An industry characterized by the heavy and bulky nature of raw material and finished products and much concerned with transport costs.

Hot spring : A stream of hot water flowing continuously. They usually occur in the region of volcanic activity.

Industrial Revolution : The change in manufacturing from hand operated tools to power-driven machinery began first in England during the middle of the eighteenth century

Industry : Systematic production characterized by division of labour and extensive use of machinery.

Intensive agriculture : Farming in which large amounts of capital and labour are applied per unit area of land in order to obtain high yield

Karst : A barren and rugged limestone plateau marked by abrupt ridges, caverns, sinks and underground streams It is typical of the Adriatic coastal region

Kolkhoz : A large collective agricultural farm where each farmer receives a share of the harvest proportionate to his work, after the State has taken its share of production It is typical of the Soviet Union.

Lacustrine plain : The floor of a former lake filled in by silt brought by inflowing streams.

Land hemisphere : The half of the earth which contains the greatest part, about six-sevenths, of the land surface The centre of the land hemisphere lies approximately at Paris.

Land use : The use which is made by man of the surface of the land. In sparsely populated areas it includes occupation of land by natural and semi-natural vegetations.

Lignite: A variety of brown coal showing more readily its vegetal origin. It contains about 40 per cent of carbon and considerable amount of moisture. It is intermediate in properties between bituminous coal and peat

Lock : A stretch of water in a canal or a river enclosed by gates with sluices to enable ships to be raised or lowered from one water-level to another.

Loess : Very fine yellowish-grey dust brought by winds and deposited in layers one over the other. It is essentially morainic material sorted out by winds during and after glacial period.

Massif : A compact plateau-like mass of uplands or a mountain usually with clearly defined margins. For example Massif central of France.

Mechanized farming : A method of farming in which maximum amount of work on the farm is done with the help of machines, big and small. Its major purpose is to save time and manual labour

Metallurgical industries : Industries that are concerned with extracting metals from their ores, and producing various articles of metals.

Metropolis : A very large city or agglomeration of population and is often a chief centre of some form of activity—administrative, commercial or industrial.

Mineral fuel : Non-metallic minerals such as coal and petroleum which are used as fuel.

Mixed farming : A type of farming in which cultivation of crops and raising livestock go hand in hand. Both these activities together play an important part in the economy

Moraine : Glacial deposits of unsorted mud, sand, gravel and rock fragments.

Natural resources : Wealth supplied by nature . fertile soil, water, natural vegetation, potential water-power, mineral deposits, fish and wild life.

Non-ferrous metals : Metals such as zinc, lead, aluminium, tin, gold and silver

Pastoralism : An economy that solely depends upon animals Whereas nomadic pastoralism is practised mainly for subsistence, the modern ranches and big dairy farms present an example of commercial pastoralism

Piedmont plain : A plain lying at the base of a mountain.

Pig-iron : Iron that is solidified in oblong masses as soon as it flows from the blast furnace. It gets its name because of the moulds that look like "pigs" in which it is allowed to solidify

Plantation agriculture : A large-scale one-crop farming resembling factory production It is usually characterized by large estates, huge capital investment, and modern and scientific techniques of cultivation and trade.

Podzol : White or grey ash-like soils developed under the coniferous or mixed forests in temperate to cold moist climate. They are typical of northern Russia.

Polder : A piece of low-lying land reclaimed from the sea, a lake or a river from which it is protected by dikes, and drained by pumping the water into canals. It is most typical of the Netherlands

Power resources : Sources such as coal, oil, gas, running water, and uranium from which power or mechanical energy can be derived commercially.

Prairie : A level and undulating land devoid of trees but covered with a continuous mat of tall grass in semi-humid temperate region, especially in North America.

Ranch : A large stock farm, usually fenced in, where animals are bred and reared on a commercial scale.

Relief : A collective name given to surface features of the earth such as mountains, plateaus, plains, valleys and water bodies

Rift valley : A valley with steep, parallel walls along the fault lines, formed by the subsidence of a part of the earth's crust.

Sericulture : Rearing of silkworms and producing raw silk.

Sovkhoz : An agricultural farm owned and run by the Soviet government. Its main purpose is to conduct experiments.

Steppe : A vast comparatively level, and treeless plain of south-eastern Europe and Siberia It consists of a contiguous mat of short grasses and represents semi-arid climatic conditions

Strip planting : A method of farming, followed in certain semi-arid areas, in which there are long, narrow strips of cultivated lands, mostly along the contour lines, alternating with other strips that are tilled, but not planted. It helps in conserving moisture and soil.

Synthetic fibre : Artificial or man-made fibres such as rayon, nylon and terelene produced synthetically by chemical processing

Synthetic rubber : An artificially produced substance having several properties of rubber

Taiga : The swampy coniferous forest region especially of Siberia It begins where tundra ends and is found in Eurasia and North America as well

Technology : Practice of the applied sciences of industrial and commercial value.

Transhumance : A seasonal movement of livestock and herdsmen from and to the mountains or between the regions of differing climates.

Truck farming : Specialized production of vegetables and fruits in areas situated far away from markets but connected by good transport, particularly motor-trucks.

Tundra : Vast treeless tract in the subpolar regions where subsoils are permanently frozen and surface is generally covered with marshes, mosses, lichen stones, and dwarf herbs and shrubs

Urbanization : A general movement of people from small rural or agricultural communities such as government, trade, transport, and manufacture. It also indicates the concentration of an increasing proportion of total population in towns and cities.

Volcano : A vent or opening in the earth's crust through which rock fragments, lava, ash, steam and other gases rise to the surface in the course of an eruption.

Watershed : Higher ground separating two adjoining drainage basins or river systems.

Whaling : A special kind of deep sea operation carried out especially in sub-polar seas for killing whales for their meat and oil (Whales are large mammals unlike fish.) The modern ships used for the purpose are known as whalers; they are floating factories which process and pack meat and oil for sale.

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